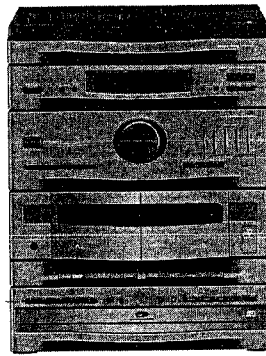


Service
Service
Service



AS641/37

AS642/37

AS645/21, /30

Service Manual

COMPACT
disc
DIGITAL AUDIO

TABLE OF CONTENTS

Safety	2
Connections & Controls	3
Specification	4
Measurement setup	5
Version table (Quick reference)	6
Service hints	7 - 8
Dismantling Hints	9 - 11
Service Testprogram	12 - 16
Wiring Diagram of Set	17 - 18
Block Diagram of Set	19 - 21
Micro Mix Board	
Circuit Diagram	22
Component Layout	22
Front Board	
Component Layout stage .2	23 - 24
Circuit Diagram AF-Part	25 - 26
Component Layout stage .3	27 - 28
Circuit Diagram Control-Part	29 - 30
Recorder Board	
Component Layout	31
Adjustment Table	32
Circuit Diagram	33 - 34
Power Board	
Component Layout	35 - 36
Circuit Diagram	37 - 38
Trafo Board	
Circuit Diagram	39
Component Layout	39
ECO 4 Tuner	
Circuit Diagram	40 - 42
Component Layout	43 - 44
Adjustment Table	45

Tuner 92

Circuit Diagram	46 - 48
Component Layout	49 - 50
Adjustment Table	51

CD

Faultfinding Tree	52
Block Diagram	53 - 54
Wiring Diagram	55
Abbreviations	56

Servo Board

Component Layout	57 - 58
Circuit Diagram	59 - 60

Decoder - Microprocessor Board

Component Layout	61 - 62
Decoder Circuit Diagram	63 - 64
Component Layout	65 - 66
Microprocessor Circuit Diagram	63 - 64
Dismantling hints	69 - 72
Exploded View CD	73 - 74

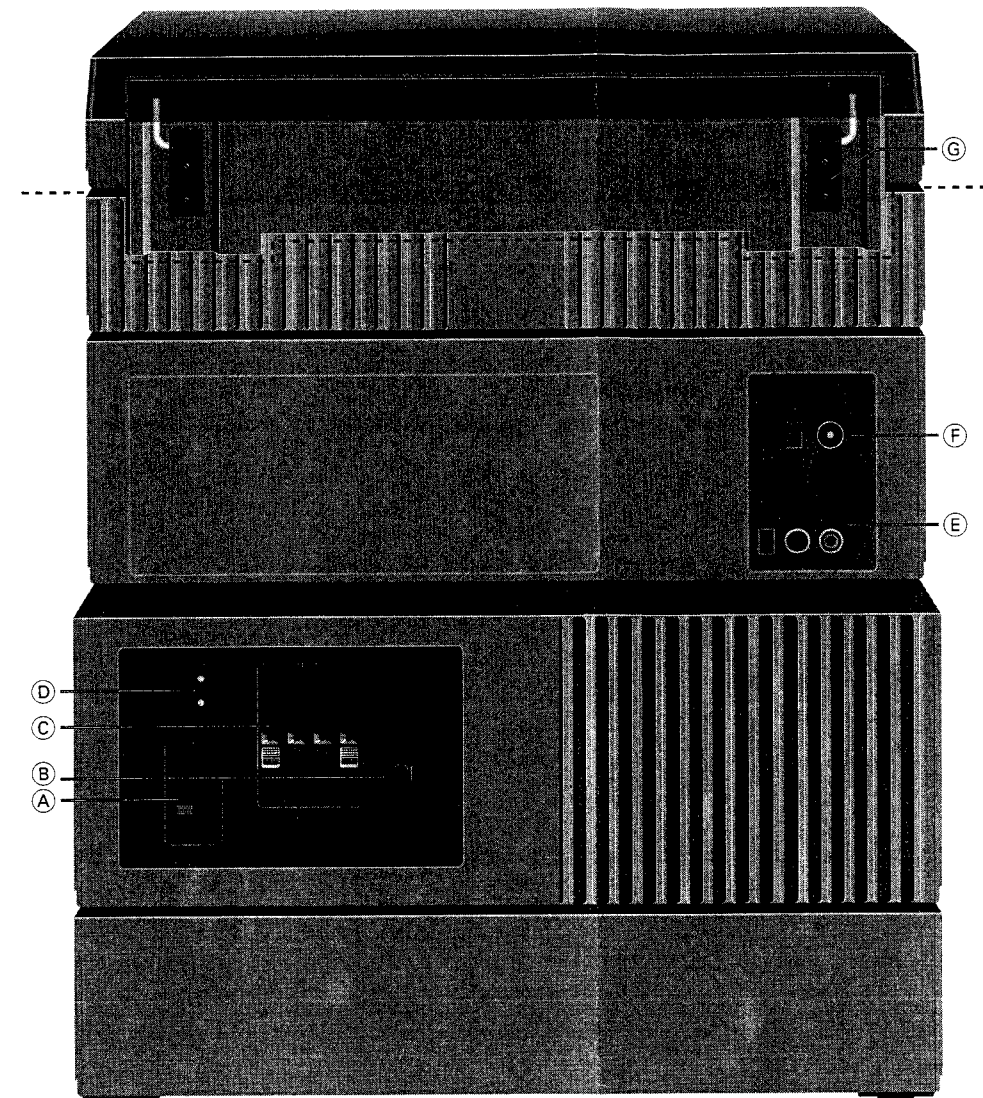
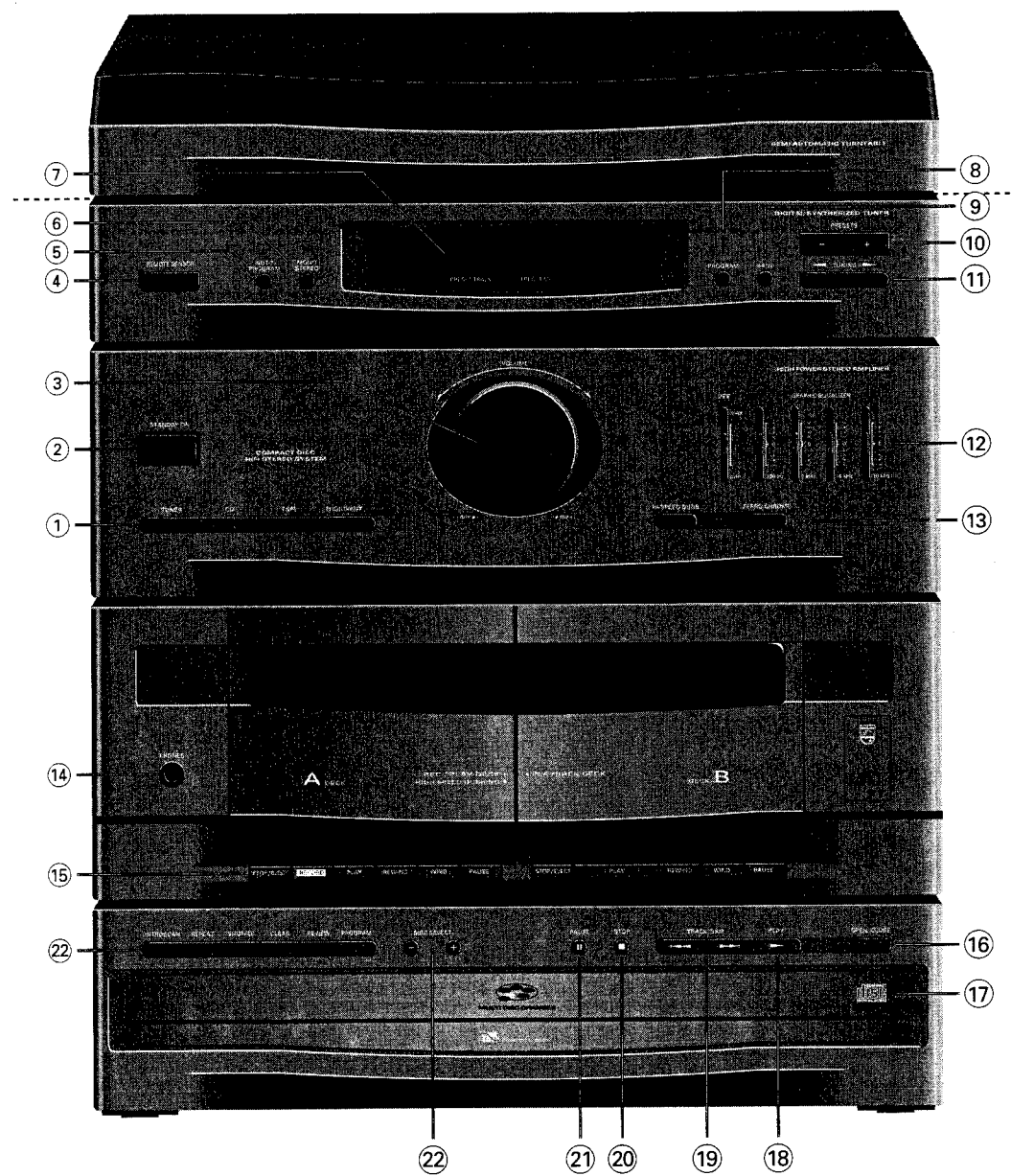
Exploded Views of Set	75 - 79
Partslst	80 ff

Annex

Service Manual Record Player DL-40

Service Manual Tape Transport RDN-12

**CLASS 1
LASER PRODUCT**



- | | | | | | | | |
|-----------------------------|-----------------|--------------------------------------|-----------------|-------------------------|-----------------|------------------------------|-----------------|
| 1 Source selector | see page 25, 26 | 12 Graphic Equalizer | see page 25, 26 | 22 Disc features | see page 29, 30 | A Voltage selector1260 | see page 39 |
| Tuner.....1440 | | 100Hz/DBB3485 | | Disc select +1460 | | B Phono supply1305 | see page 37, 38 |
| CD1438 | | 300Hz.....3484 | | Disc select -1461 | | C Speaker terminal.....1304 | see page 37, 38 |
| Tape.....1444 | | 1kHz.....3483 | | Program1459 | | D Mains socket1255 | see page 39 |
| Phono/Aux1437 | | 4kHz.....3482 | | Review1458 | | E Aux / Phono sockets ..1408 | see page 25, 26 |
| 2 Stand by.....1439 | see page 29, 30 | 10kHz.....3481 | | Clear1462 | | F FM aerial socket.....1101 | see page 40 |
| 3 Volume.....3480 | see page 25, 26 | 13 High Speed Dubbing..1433 | see page 29, 30 | Shuffle.....1463 | | for ECO 4 Tuner | |
| 4 Remote sensor.....7422 | see page 25, 26 | Ferro/Chrome.....1423 | see page 25, 26 | Repeat1453 | | FM aerial socket.....1110 | see page 46 |
| 5 Auto Program.....1436 | see page 29, 30 | 14 Headphone socket.....1410 | see page 25, 26 | Introsan1452 | | | |
| 6 Mono/Stereo1448 | see page 29, 30 | 15 Tape transport keys ...mechanical | see page 29, 30 | | | | |
| 7 Display1415 | see page 29, 30 | 16 Open/Close (CD)1456 | see page 29, 30 | | | | |
| 8 Program (Tuner)1435 | see page 29, 30 | 17 CD Tray | see page 29, 30 | | | | |
| 9 Band.....1434 | see page 29, 30 | 18 Play (CD)1457 | see page 29, 30 | | | | |
| 10 Presets | see page 29, 30 | 19 Track skip (CD) | see page 29, 30 | | | | |
| Up1425 | | ◀◀.....1454 | see page 29, 30 | | | | |
| Down.....1426 | | ▶▶.....1455 | see page 29, 30 | | | | |
| 11 Tuning | see page 29, 30 | 20 Stop (CD)1450 | see page 29, 30 | | | | |
| Up1421 | | 21 Pause (CD)1451 | see page 29, 30 | | | | |
| Down.....1422 | | | | | | | |

Specification

General:

Mains voltage : 220V / 50Hz for /20, /22
: 240V / 50Hz for /25
: 120V or 230V /50Hz via voltage selector for /21, /30
: 120V / 60Hz for /37

Power consumption : ≤ 85 W at maximum output power
: ≤ 10 W in stand by

Amplifier:

Output power : 2 x 15W at 6Ω D=10%
Music power : 2 x 45W at 6Ω
Headphone : 6,3mm stereo jack 25mW at 32Ω (≐0,9V at 32Ω)

Power stage protection : Temperature

Frequency response : 63 Hz - 14 kHz (-3dB) Limit
: 63 Hz - 17 kHz (-3dB) Typical value

Tone control
DBB : ±6dB at 100 Hz
300 Hz : ±6dB at 300 Hz
1 kHz : ±6dB at 1 kHz
4 kHz : ±6dB at 4 kHz
10 kHz : ±6dB at 10kHz

Input sensitivity
PHONO/LINE : 350 mV

Tuner:	FM	MW	LW
Tuning range	87,5 - 108 MHz Grid 50 kHz	522 - 1611 kHz (Grid 9kHz) 530 - 1700 kHz (only for /37) (Grid 10kHz)	153 - 297 kHz (Grid 3kHz)
Aerial input	Coax 75 Ω F-Connector	Ferrite antenna	Ferrite antenna
IF	10,7 MHz ± 25 kHz	450 kHz ± 1 kHz	450 kHz ± 1 kHz
Sensitivity Mono : 26dB S/N Stereo : 46dB S/N Search tuning	≤ 4 μV (2 μV typ.) ≤ 45 μV 7 μV typ.	3 mV/m (1,5 mV/m typ.) ≤ 6mV/m	≤ 6 mV/m ≤ 6mV/m
Distortion	≤3% (2% typ.) RF=1mV Δf=75kHz	≤5% (3% typ) RF=100mV/m m=80%	≤5% (3% typ) RF=100mV/m m=80%
Channel separation	≥26dB (30dB typ)	-	-
Image rejection ratio	30 dB (40 dB typ.)	27 dB (30 dB typ.)	40 dB (43 dB typ.)
-3 dB limiting point	≤ 5 μV (2 μV typ.)		

CD unit: Have to be measured direct on internal connector 1815

Frequency response : 20 - 20.000 Hz ±2 dB
Output level : 2V ±3 dB
Signal/noise ratio : ≥90 dB
Distortion : ≤1% at 1 kHz
Channel difference : ≤2 dB at 1 kHz
Channel crosstalk : 50 dB max.
De emphasis : 0 or 15/50μs switched automatically by subcode on the disc

Laser
Output power : ≤500μW
Wave length : 780 ± 20 nm

Recorder part:

Tape speed : 4,76cm/s ±2% in **Normal Speed**
: 8,5cm/s ±12% in **High Speed Dubbing**

Wow & Flutter : ≤0,4%
Winding speed : ≤ 130s for C60 cassette
Erase / Bias system : AC 60kHz
RIF-shift : service solution on request

Distortion at 200 nWb/m : ≤ 5%
Channel difference at PB : ≤ 3dB
Channel difference overall : ≤ 3dB
Channel separation : ≥ 18dB at 1kHz
Track separation : ≥ 55dB at 1kHz

Phono part:

Power supply : 12V DC / 80mA
Wow & Flutter : 0,25% JIS
: 0,35% DIN
Operating speed : 33⅓ and 45 rpm
Drive system : Belt drive with automatic return

	IEC I	IEC I (dubbing)	IEC II	IEC II (dubbing)	Dubbing HS ³⁾
Frequency response -8 dB ¹⁾	100Hz - 10kHz	125Hz - 8kHz	100Hz - 10kHz	125Hz - 8kHz	125Hz - 8kHz
Signal to Hiss ratio ²⁾ A-weighted	≥ 45 dB	≥ 45 dB	≥ 45 dB	≥ 45 dB	
Signal to Noise ratio ²⁾ FF-weighted	≥ 40 dB	≥ 40 dB	≥ 40 dB	≥ 40 dB	
Erase attenuation ⁴⁾	≥ 55 dB	≥ 55 dB	≥ 55 dB	≥ 55 dB	

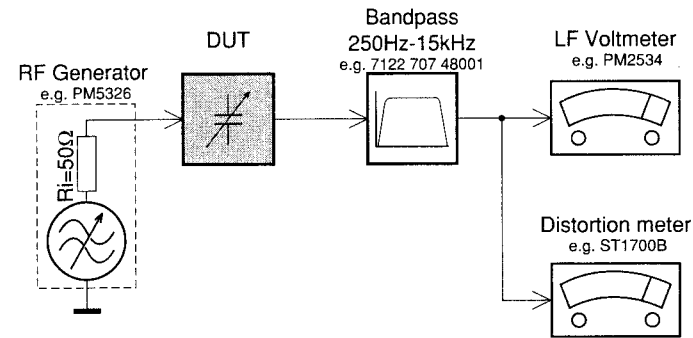
1) typical value 2) at 250 nWb/m 3) at -10dB 4) Use a 1kHz passfilter to minimize the wide band noise component.

The set reacts on following RC5 commands:

	Systemcode	Commandcode
Stand by	17,20,21	12
Tuner	17	63
Aux/Phono	21	63
CD	20	63
Volume up	16	16
Volume down	16	17
Repeat	20	29
Shuffle	20	28
Scan	20	43
Play (CD)	20	53
Pause (CD)	20	48
Next (CD)	20	32
Previous (CD)	20	33
Search Forward (CD)	20	52
Search Backward (CD)	20	50
Stop (CD)	20	54
Tuning up	17	30
Tuning down	17	31
Preset up	17	32
Preset down	17	33

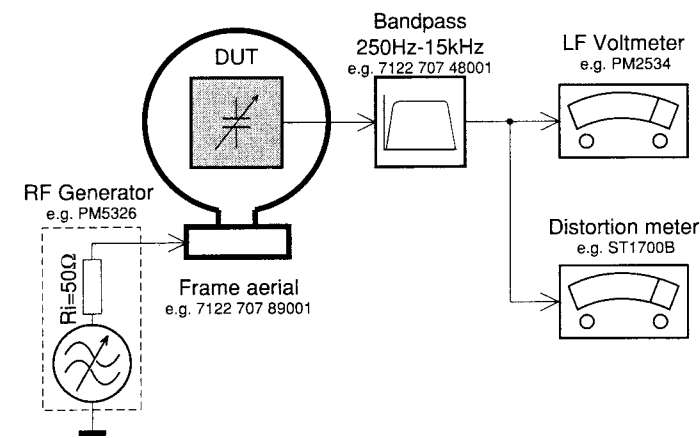
Measurement setup

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

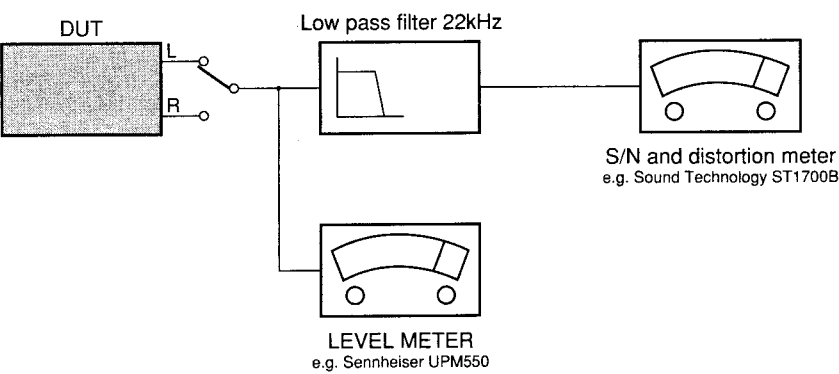
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
L.P.F. = 13th order filter 4822 395 30204



DUT..... Device Under Test

Version table (Quick reference)

	AS640 /20	AS640 /20B	AS640 /21	AS640 /22	AS640 /25	AS640 /37	AS641 /37	AS642 /37	AS645 /21	AS645 /30
Mains cord										
4822 321 10954										x
4822 321 10831	x	x	x	x					x	
4822 321 10883						x	x	x		
4822 321 10918					x					
Mains transformer										
4822 146 31244	x	x		x						
4822 146 31245						x	x	x		
4822 146 31246			x		x				x	x
Mains socket										
4822 265 31015	x	x	x	x	x				x	x
4822 265 31016						x	x	x		
Voltage selector										
4822 272 10269			x						x	x
IR Remote control										
4822 218 10513	x	x	x	x	x	x	x	x	x	x
Loudspeaker box										
4822 445 10362	x			x	x					
4822 445 10365						x				
4822 445 10366		x	x						x	x
4822 445 10368							x	x		
Tuner										
ECO4 Tuner	x	x	x		x	x	x	x	x	x
Tuner 92				x						
Record player										
DL-40									x	x
Micro Mix function										
available								x		

Service tools

TORX screwdriver set SBC 163 4822 395 50145
Audio signal disc SBC 429 4822 397 30184
Test disc 5 (disc without errors)
Test disc 5A (disc with dropout errors, black spots and finger prints)
SBC 426/426A 4822 397 30096

Burn in test disc (65 min. 1kHz signal at -30dB level without "pause") 4822 397 30155
Universal test cassette Fe SBC 420 4822 397 30071
Universal test cassette CrO₂ SBC 419 4822 397 30069

SERVICE POSITION for
Servicing Front, Recorder Board and Tape transports

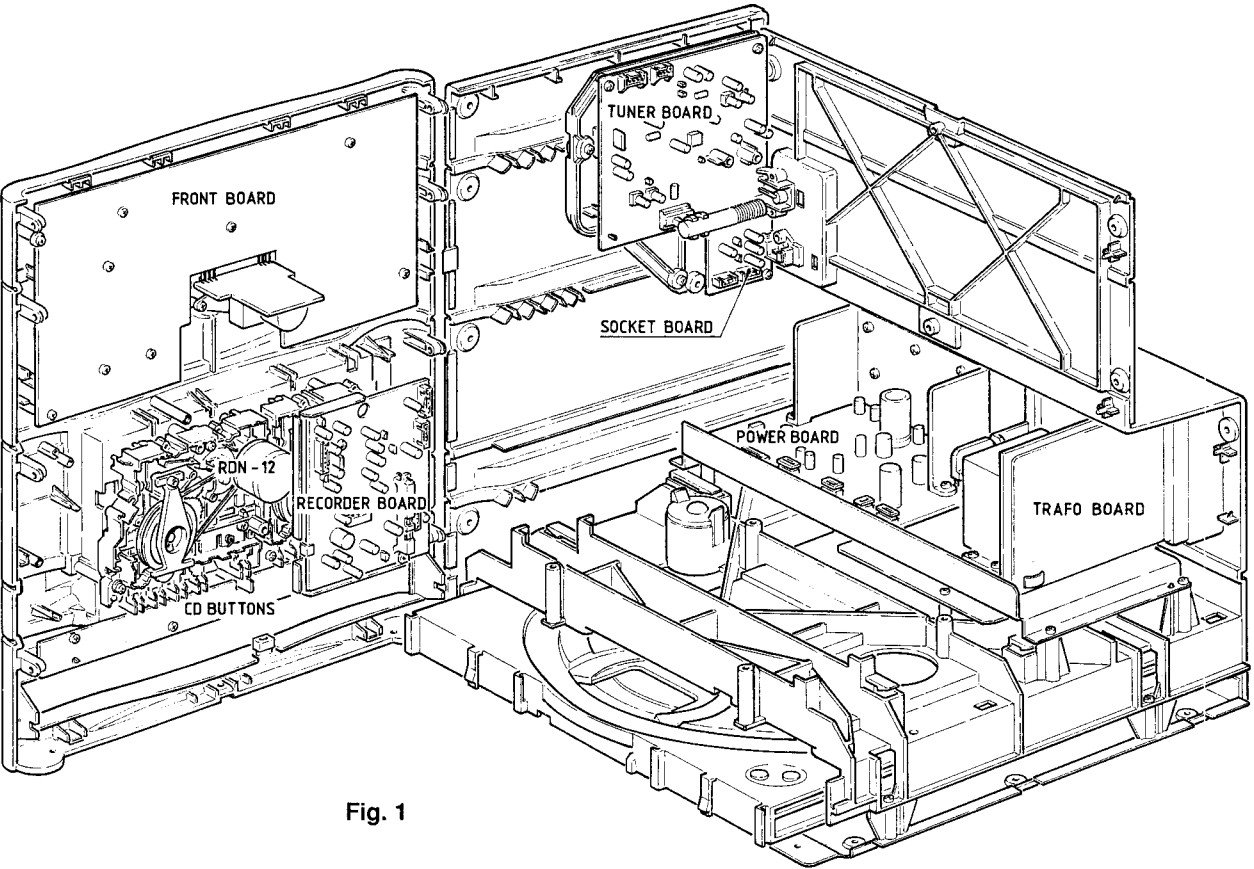


Fig. 1

- 1) Remove top cover as shown in picture 1.
- 2) Remove front of CD tray as shown in Fig. 2.
- 3) Remove right side of cabinet (11 screws).
- 4) Remove front (7 screws) and turn whole front aside as shown in Fig. 1.

Dismantling Front of CD Tray

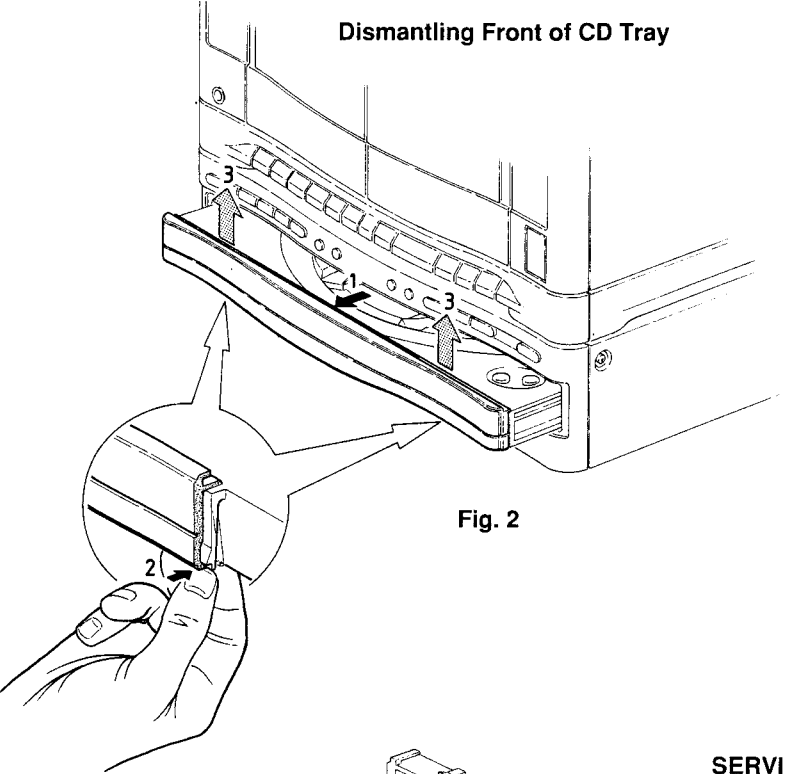


Fig. 2

SERVICE POSITION for
Servicing the CD Part

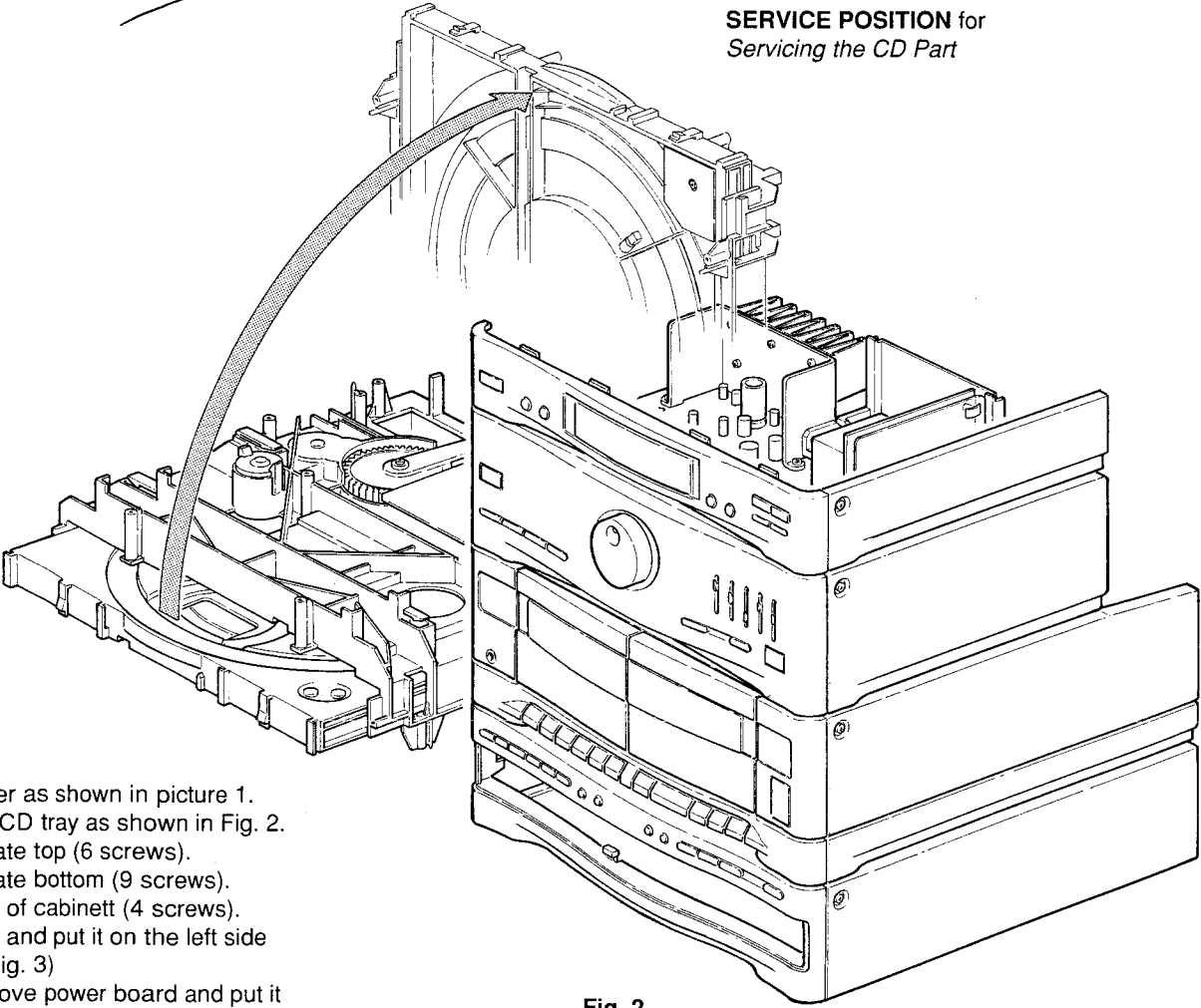


Fig. 2

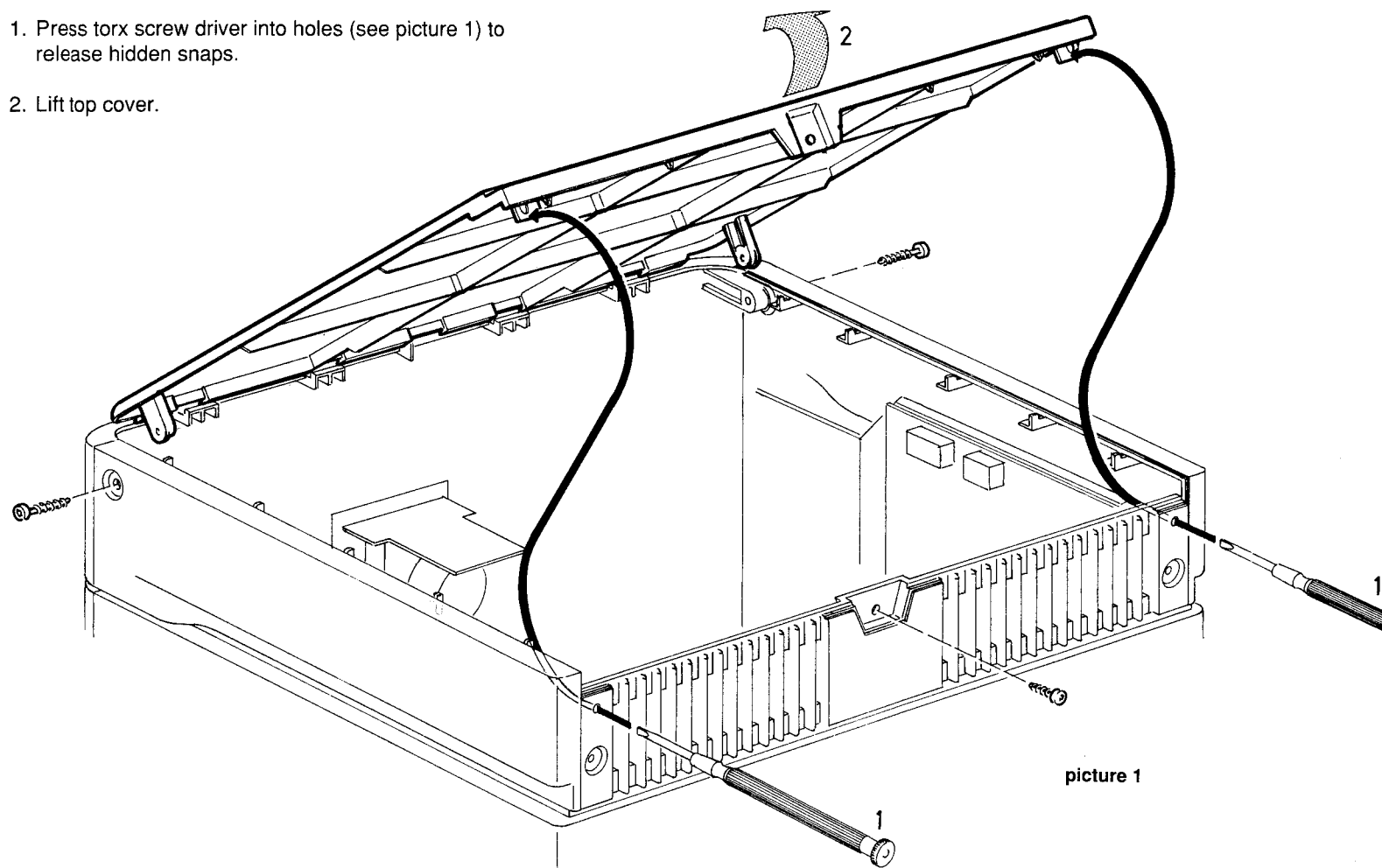
- 1) Remove top cover as shown in picture 1.
- 2) Remove front of CD tray as shown in Fig. 2.
- 3) Remove back plate top (6 screws).
- 4) Remove back plate bottom (9 screws).
- 5) Remove left side of cabinet (4 screws).
- 6) Remove CD part and put it on the left side of the set. (see Fig. 3)
- 7) If necessary remove power board and put it behind the set.

Dismantling Hints

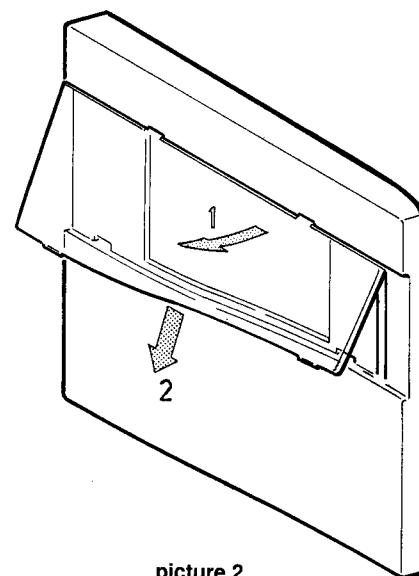
Dismantling of Top Cover

Remove 3x screws.

1. Press torx screw driver into holes (see picture 1) to release hidden snaps.
2. Lift top cover.

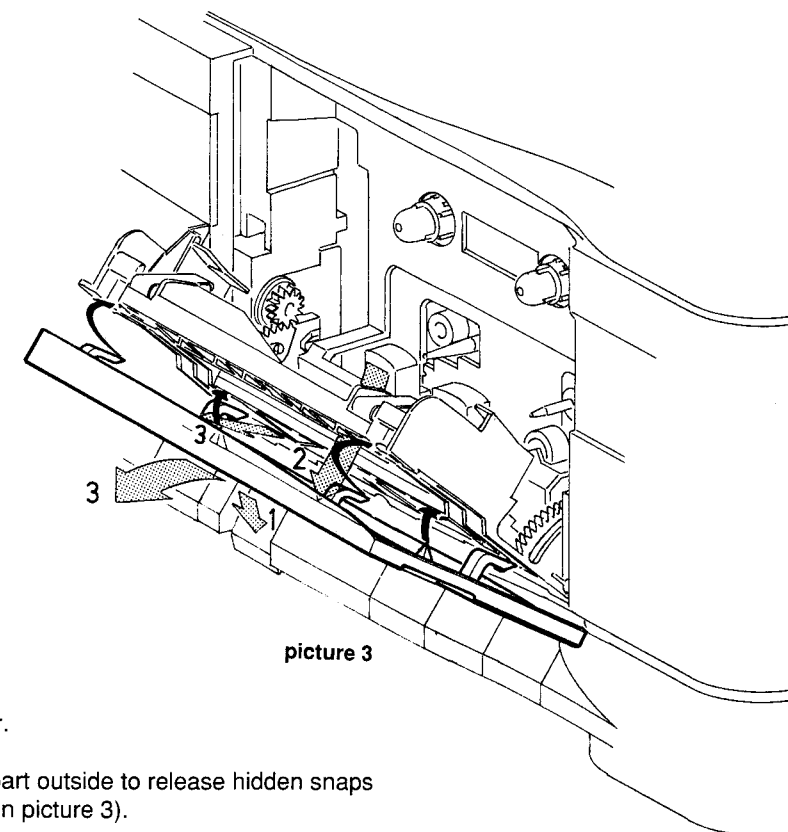


Dismantling Window of Cassette Door



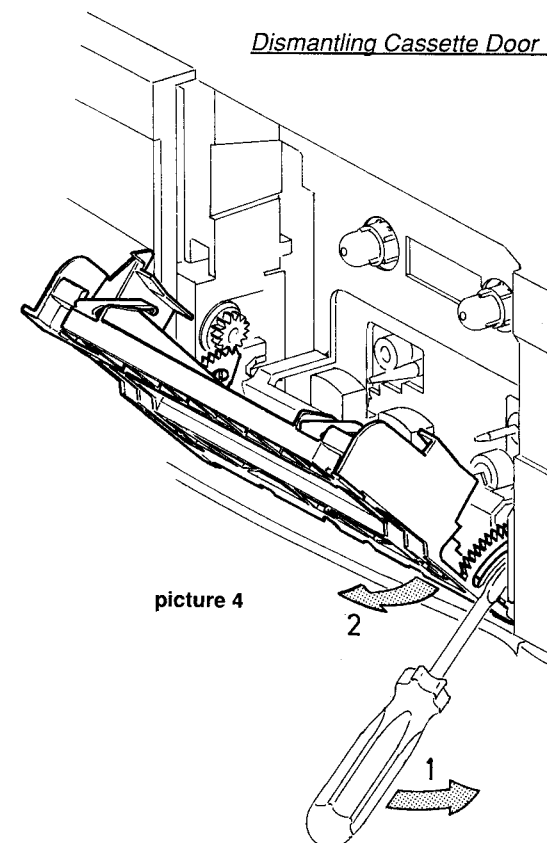
- 1) Press the window outside as shown in picture 2. You don't need any tool.

Dismantling Cassette Door Ornamental Part



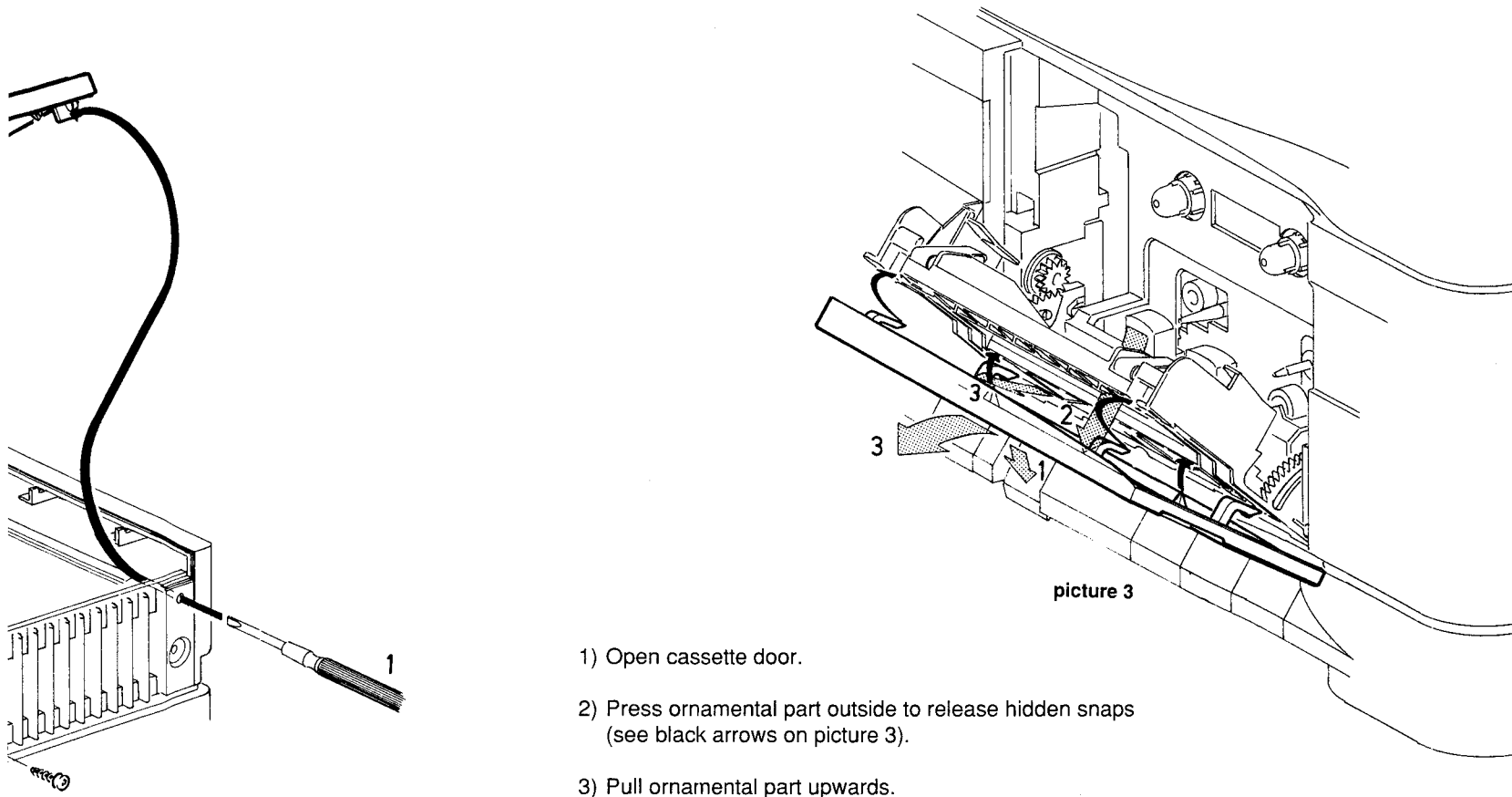
- 1) Open cassette door.
- 2) Press ornamental part outside to release hidden snaps (see black arrows on picture 3).
- 3) Pull ornamental part upwards.

Dismantling Cassette Door Technical Part



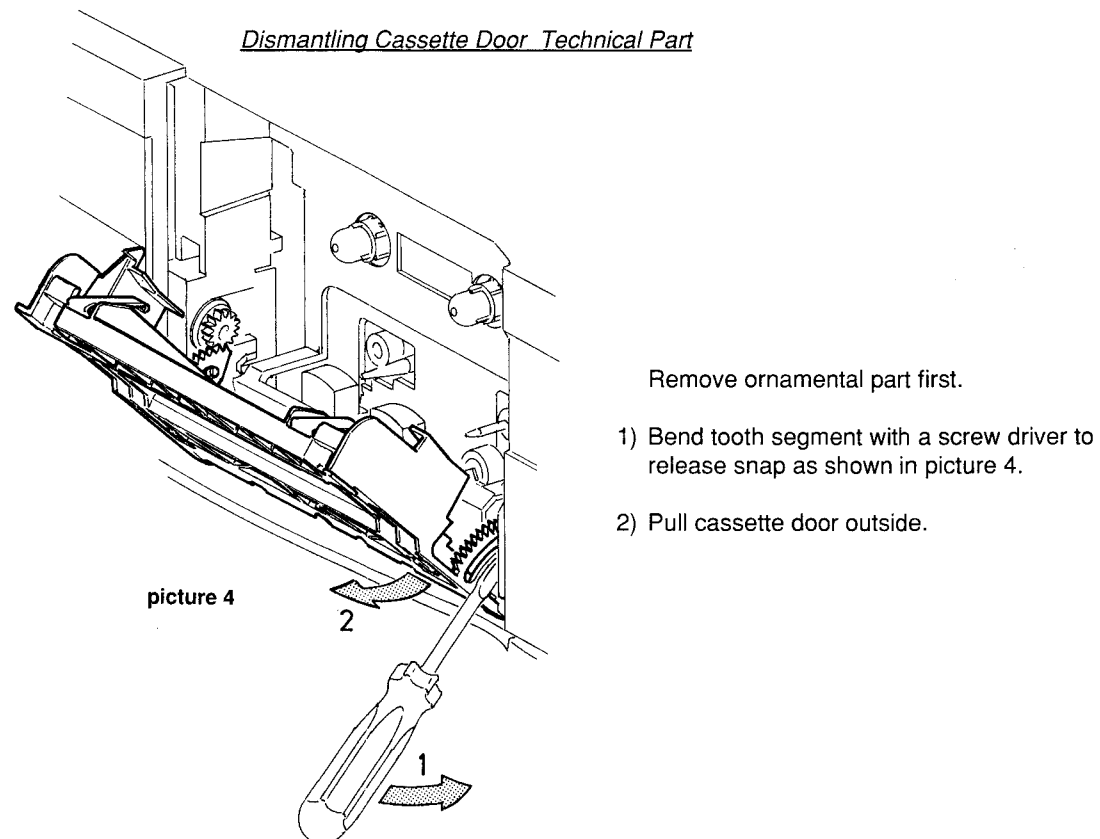
Remove ornamental part first.

- 1) Bend tooth segment with a screw driver to release snap as shown in picture 4.
- 2) Pull cassette door outside.

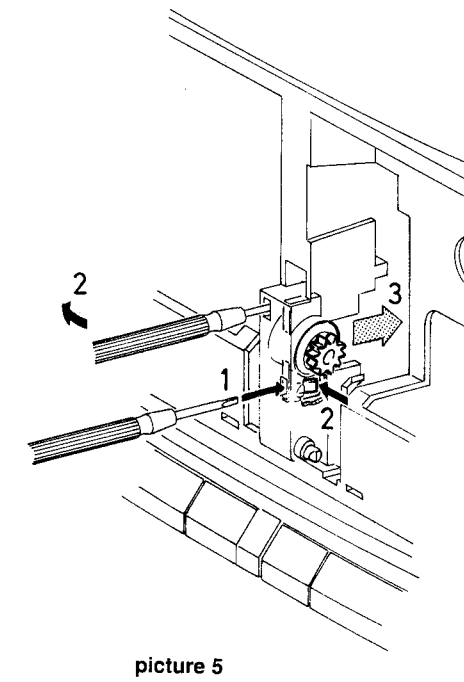
Dismantling Cassette Door Ornamental Part

picture 1

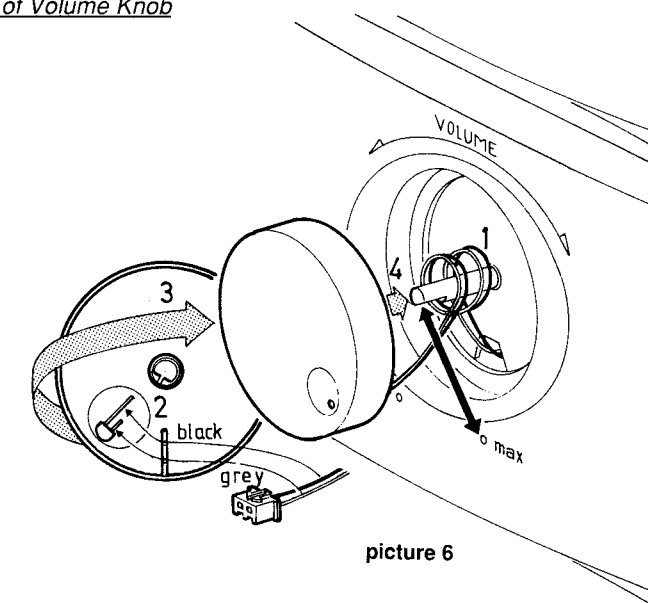
picture 3

Dismantling Cassette Door Technical Part

picture 4

Dismantling of Damper

picture 5

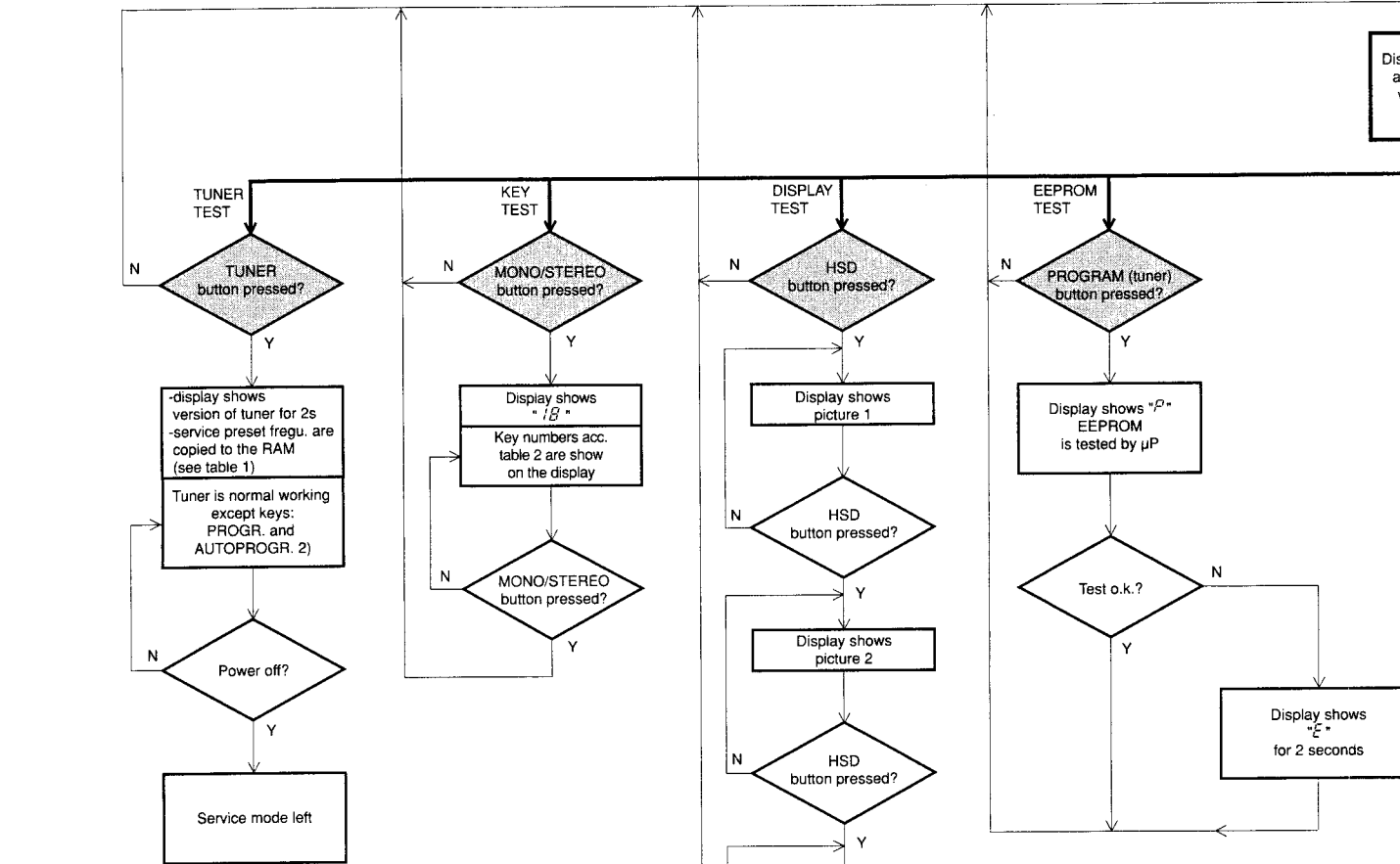
Mounting of Volume Knob

picture 6

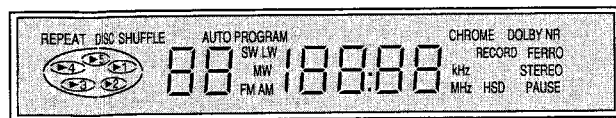
SERVICE TEST PROGRAM

The service test program can be left:

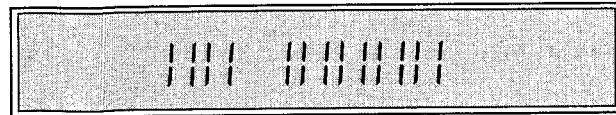
- at each step: by switching power off (disconnect mains)
- from service main menu:
- by pressing the STANDBY button twice the set is switched to normal working mode except: * in CD mode the error codes will be displayed.



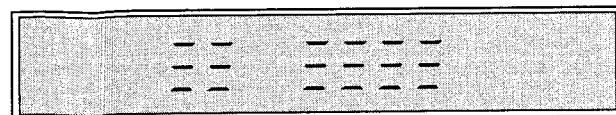
2) Preset frequencies of table 1 can be used as in normal tuner mode. If field strength is high enough "PROGRAM" flag will light. Preset frequencies stored by the customer are still stored in the EEPROM and can be recalled by a reset of the μ P (switching power off by disconnecting mains cord)



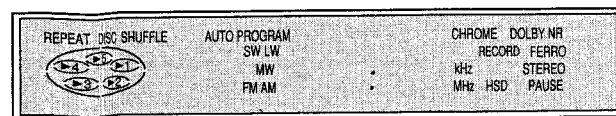
Picture 1



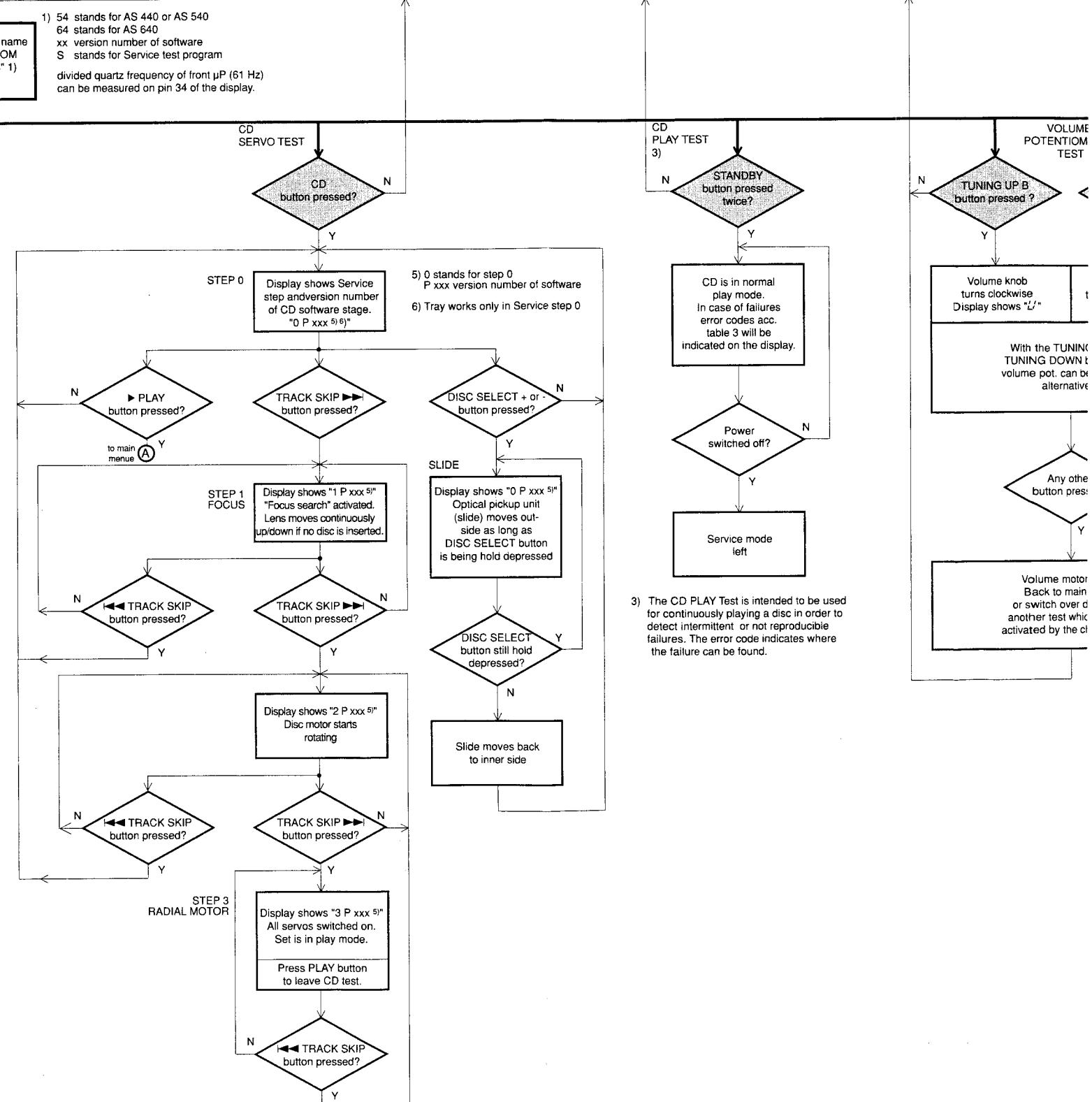
Picture 2



Picture 3



Picture 4



3) The CD PLAY Test is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.

To start service test program hold
PROGR. & PRESET UP
buttons depressed while
plugging in the mains cord

Display shows set name
and number of ROM
version "54 xx S" 1)
(Main menu)

1) 54 stands for AS 440 or AS 540
64 stands for AS 640
xx version number of software
S stands for Service test program
divided quartz frequency of front μ P (61 Hz)
can be measured on pin 34 of the display.

CD
SERVO TEST

CD
button pressed?

STEP 0

Display shows Service
step and version number
of CD software stage.
"0 P xxx 5)"

5) 0 stands for step 0
P xxx version number of software
6) Tray works only in Service step 0

PLAY
button pressed?

to main
menu

TRACK SKIP
button pressed?

DISC SELECT + or -
button pressed?

STEP 1
FOCUS

Display shows "1 P xxx 5)"
"Focus search" activated.
Lens moves continuously
up/down if no disc is inserted.

SLIDE
Display shows "0 P xxx 5)"
Optical pickup unit
(slide) moves out-
side as long as
DISC SELECT button
is being hold depressed

TRACK SKIP
button pressed?

TRACK SKIP
button pressed?

DISC SELECT
button still hold
depressed?

Display shows "2 P xxx 5)"
Disc motor starts
rotating

Slide moves back
to inner side

TRACK SKIP
button pressed?

TRACK SKIP
button pressed?

STEP 3
RADIAL MOTOR

Display shows "3 P xxx 5)"
All servos switched on.
Set is in play mode.
Press PLAY button
to leave CD test.

TRACK SKIP
button pressed?

CD
PLAY TEST
3)

STANDBY
button pressed
twice?

CD is in normal
play mode.
In case of failures
error codes acc.
table 3 will be
indicated on the display.

Power
switched off?

Service mode
left

3) The CD PLAY Test is intended to be used
for continuously playing a disc in order to
detect intermittent or not reproducible
failures. The error code indicates where
the failure can be found.

VOLUME
POTENTIOMETER
TEST

TUNING UP B
button pressed ?

A TUNING DOWN
button pressed ?

Volume knob
turns clockwise
Display shows "U"

Volume knob
turns counter clockwise
Display shows "d"

With the TUNING UP and
TUNING DOWN buttons the
volume pot. can be controlled
alternatively

Any other
button pressed?

Volume motor stops.
Back to main menu
or switch over directly to
another test which can be
activated by the choosen key

CLEAR
EEPROM
4)

AUTOPROGRAM
button pressed?

Display shows
"C"
for 2 seconds
EEPROM is cleared


4) Use this mode only in
case of a μ P "hang up"
to clear the EEPROM.
Attention: All preset frequencies
stored by the customer
will be cleared.

PRESET	VERSION						
	EUR	EAS	USA	EUS	OSE	OSS	UNIT
	Europe 3-band	East Europe 3-band	USA 2-band	Europe 4-band	Oversea 2-band	Oversea 3-band	
1	87,5	65,81	87,5	87,5	87,5	87,5	MHz
2	108	74	108	108	108	108	MHz
3	98	87,5	98	98	98	98	MHz
4	89,7	108	89,7	89,7	89,7	89,7	MHz
5	93	98	93	93	93	93	MHz
6	104,9	89,7	104,9	104,9	104,9	104,9	MHz
7	522	93	530	522	530	530	kHz
8	1611	104,9	1710	1611	1710	1710	kHz
9	540	522	540	540	540	540	kHz
10	549	1611	550	549	550	550	kHz
11	558	540	560	558	560	560	kHz
12	1494	549	1500	1494	1500	1500	kHz
13	153	558	1600	153	1600	1600	kHz
14	279	1494	1000	279	1000	3900	kHz
15	156	153		156		12100	kHz
16	198	279		198		4250	kHz
17	270	156		270		8000	kHz
18	999	198		5900		11900	kHz
19		270		18100		1000	kHz
20		999		6200			kHz
21				17000			kHz
22				12000			kHz
23				999			kHz

table 1

Key activated	Display shows	Key activated	Display shows
Tuning up	01	Autoprogram	17
Tuning down	03	Mono / Stereo	18
Preset up	04	Tuner	19
Preset down	02	Stand by	20
—	—	Tape	21
Band	06	Phono / Aux	22
Program(Tuner)	07	CD	23
Fe/Cr	08	—	—
Disc Select –	09	Track skip >>	25
Disc Select +	10	—	—
Review	11	Open / Close	27
Program (CD)	12	Play (CD)	28
HS dubbing	13	Clear	29
Pause (CD)	14	Shuffle	30
<< Track skip	15	Introsan	31
Stop (CD)	16	Repeat	32

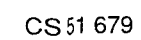
table 2

If a key is activated at the remote control,  is shown additionally to the key number as long as the key is hold depressed.

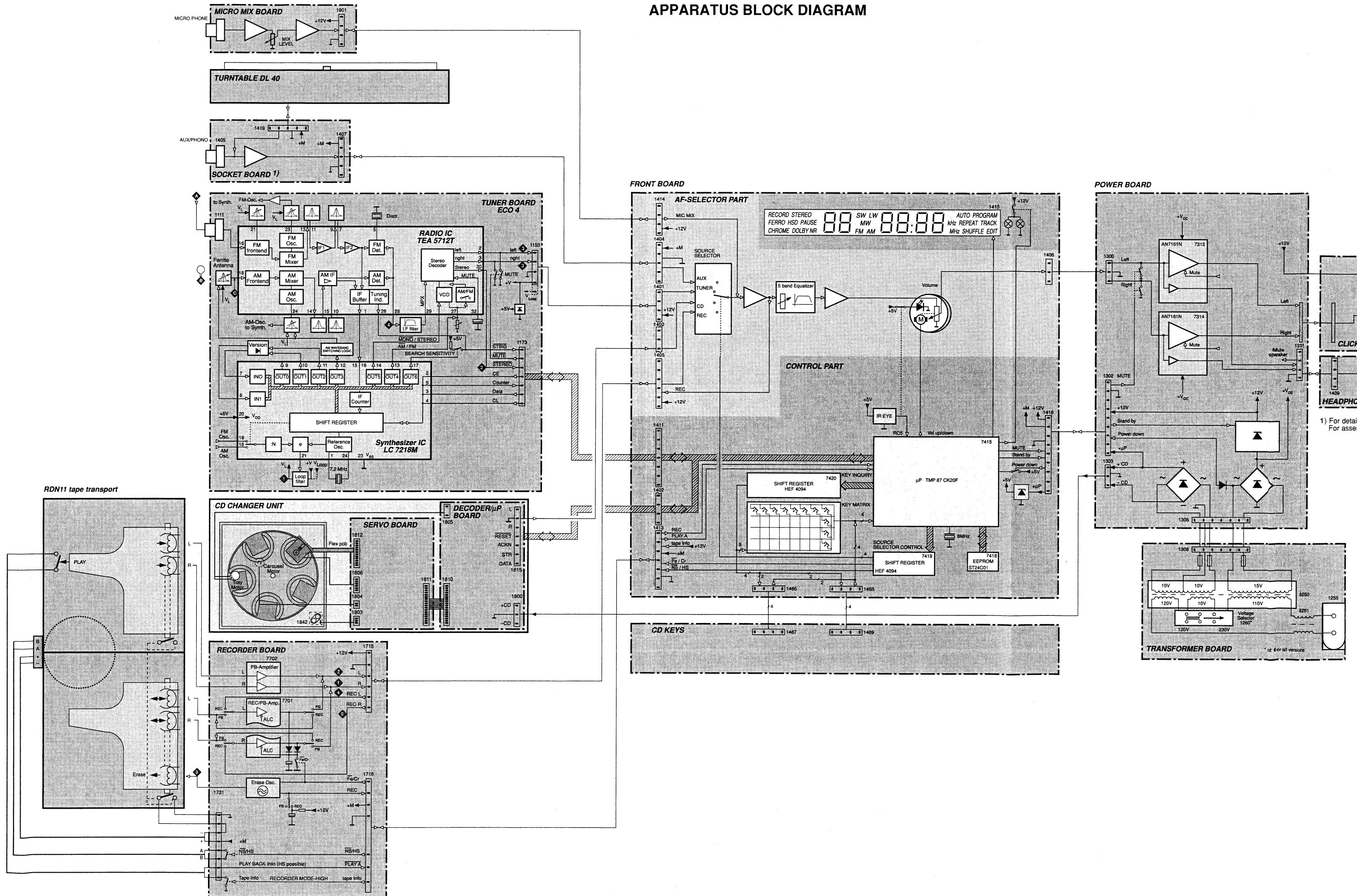
Error code shown on the display		Description
2	Err	Focus error
7	Err	Subcode error, no valid subcode
8	Err	TOC error, out of lead-in area while reading TOC
9	Err	CD4 + decoder error
10	Err	Radial error
12	Err	Fatal sledge error
13	Err	Turntable motor error
30	Err	Too many grooves to jump
31	Err	Search time out error
32	Err	Search binary error
33	Err	Search index error (index not found)
34	Err	Search time error (relative time not found)
35	Err	Carousel error
50	Err	Edit calculation error
51	Err	Wrong disc
52	Err	Insert disc

table 3

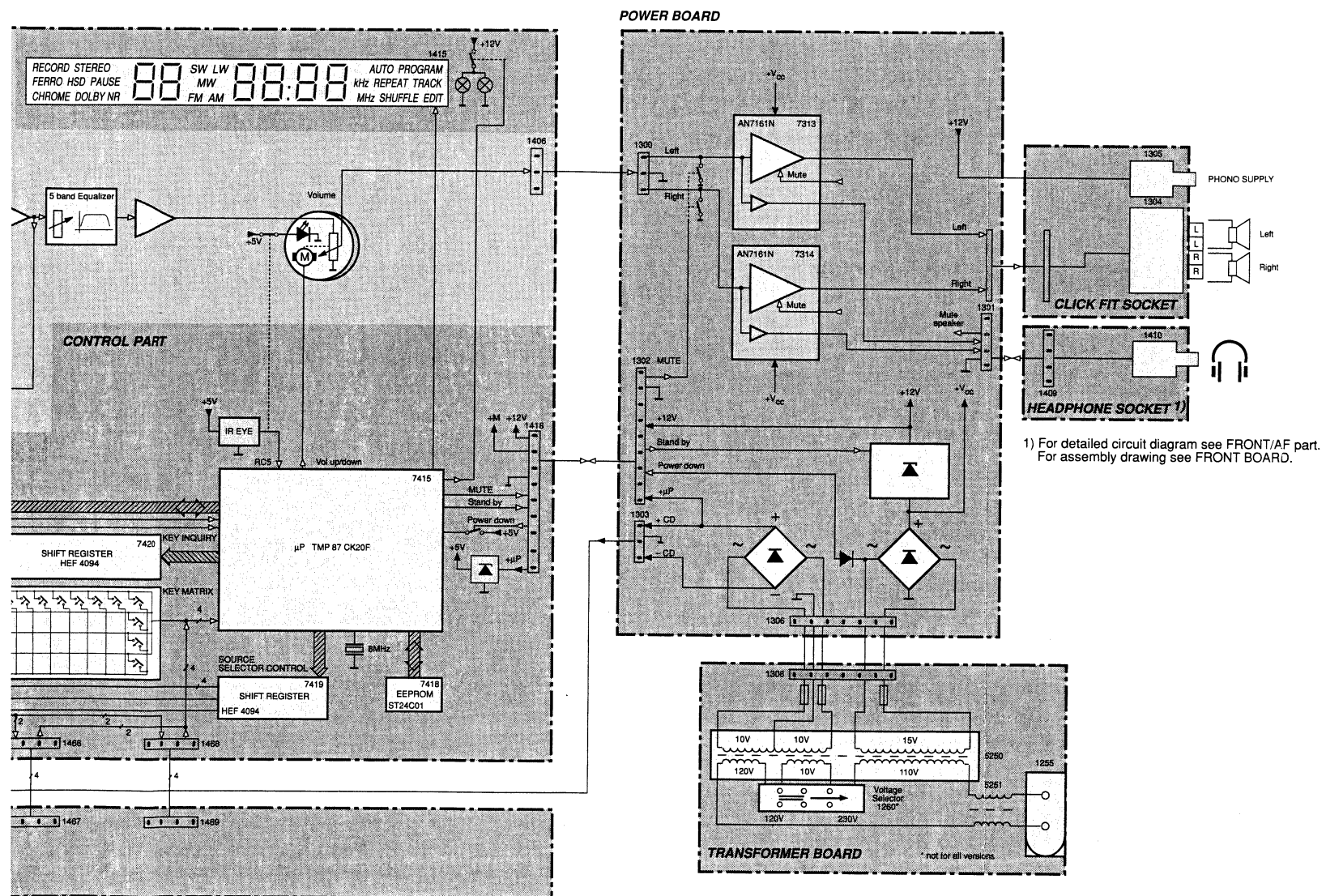
RDN11 TAPE TRANSPORT(top view)



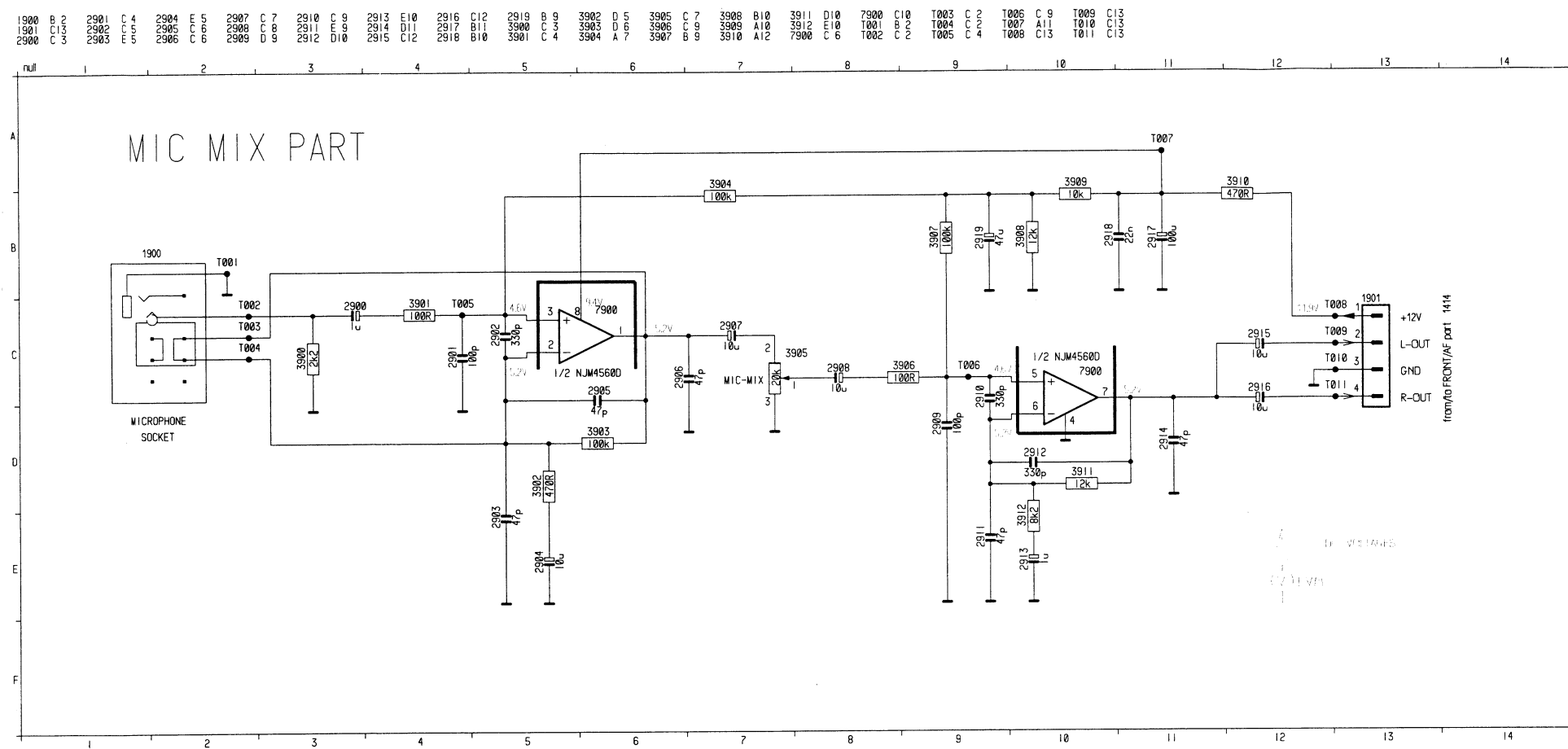
APPARATUS BLOCK DIAGRAM



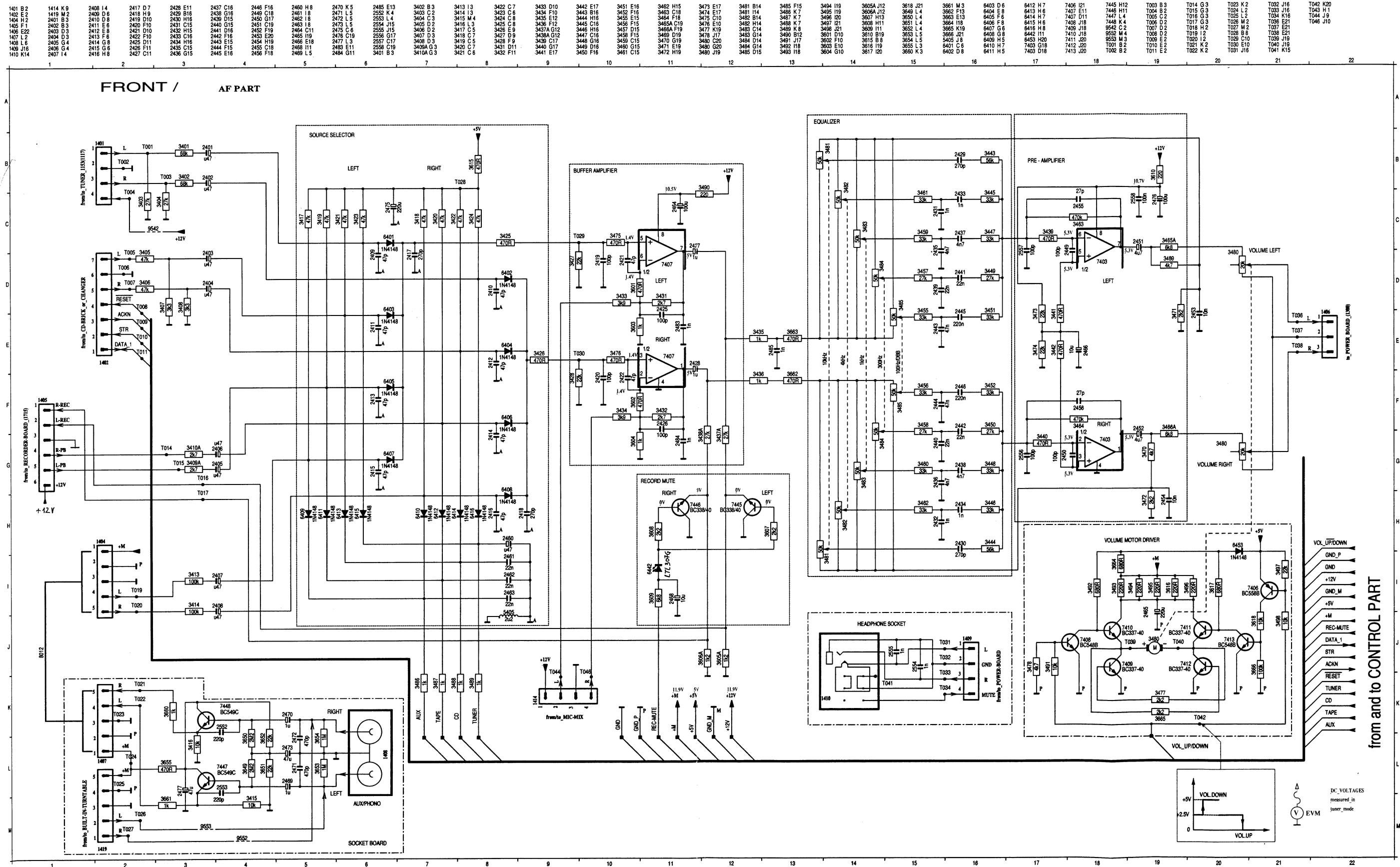
LOCK DIAGRAM



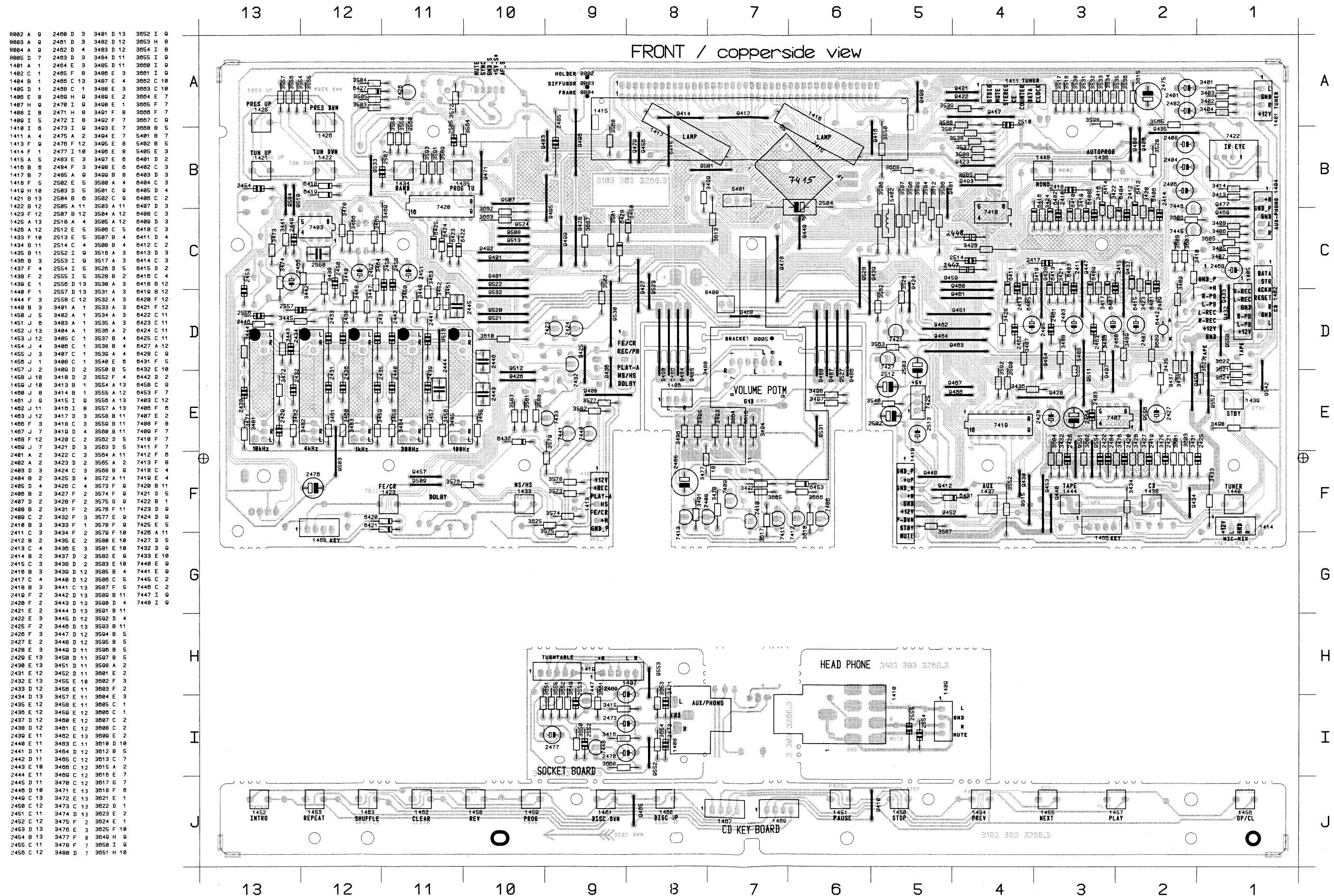
Micro Mix not in all versions

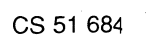


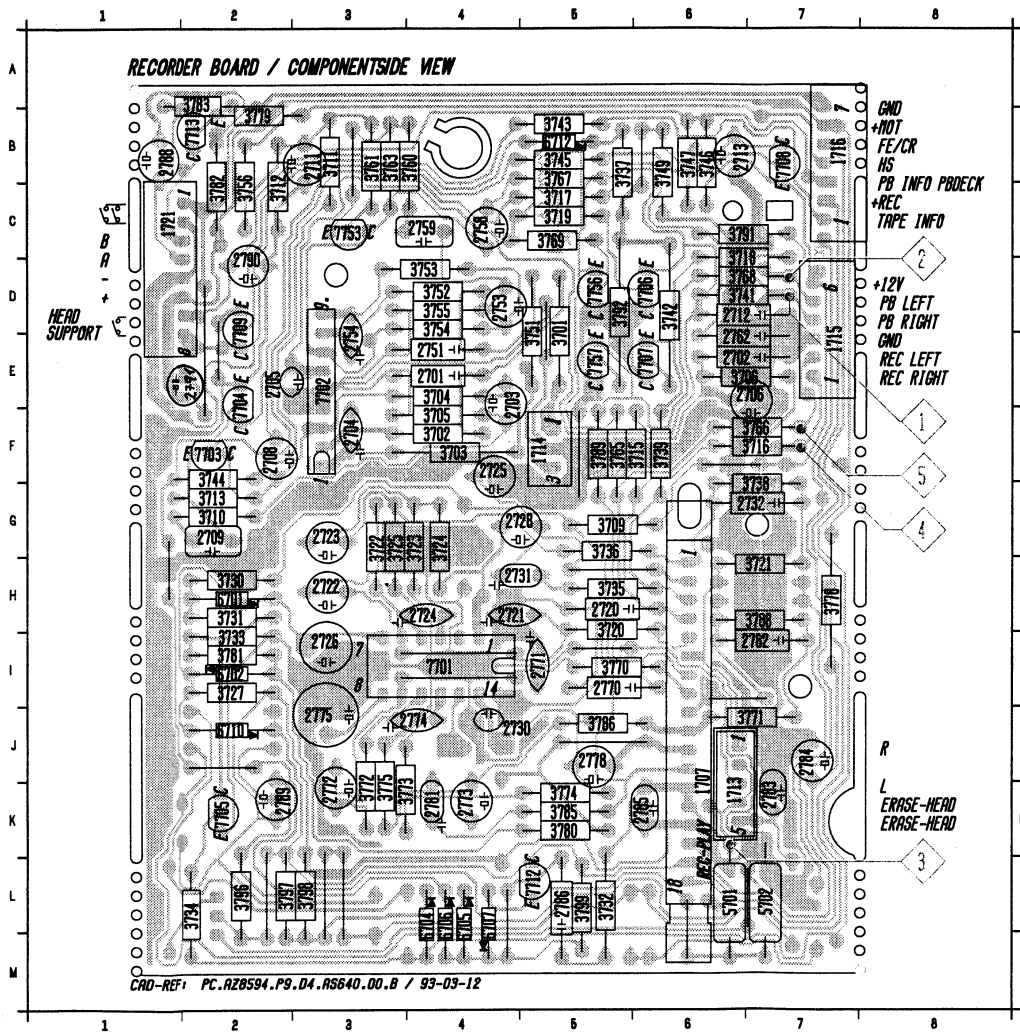




valid for sets with PCBs stage .3







1707 J6	3711 B3	3783 R2
1713 K6	3712 C2	3785 K5
1714 F5	3713 G2	3786 J5
1715 E7	3715 F6	3788 H7
1716 B7	3716 F7	3789 F5
1721 C1	3717 C5	3791 C6
2701 E4	3718 D6	3792 O5
2702 E6	3719 C5	3796 L2
2703 E4	3720 H5	3797 L2
2704 F3	3721 H7	3798 L3
2705 E2	3722 G3	3799 L5
2706 E7	3723 G4	5701 L6
2708 F2	3724 G4	5702 L7
2709 G2	3725 G3	6701 H2
2711 B3	3727 I2	6702 I2
2712 D6	3730 H2	6704 L4
2713 B6	3731 H2	6705 L4
2720 H5	3732 L5	6706 L4
2721 H4	3733 I2	6707 L4
2722 H3	3734 L2	6710 J2
2723 G3	3735 H5	6712 B5
2724 H4	3736 G5	7701 I4
2725 F4	3737 B5	7702 E3
2726 I3	3738 G7	7703 F2
2728 G5	3739 F6	7704 E2
2730 J4	3741 D6	7705 K2
2731 H5	3742 D6	7706 D6
2732 G7	3743 B5	7707 E6
2751 E4	3744 F2	7708 B7
2753 D4	3745 B5	7709 D2
2754 E3	3746 B6	7712 L5
2758 C4	3747 B6	7713 B2
2759 C4	3749 B6	7753 C3
2762 E6	3751 D5	7756 D5
2770 I5	3752 D4	7757 E5
2771 I5	3753 D4	9701 L7
2772 K3	3754 D4	9702 L6
2773 K4	3755 D4	9705 L4
2774 J4	3756 C2	9706 J2
2775 J3	3760 B4	9707 H1
2778 J5	3761 B3	9708 D5
2781 K4	3763 B3	9709 E2
2782 I7	3765 F5	9711 J5
2783 K7	3766 F7	9712 I6
2784 J7	3767 B5	9713 I5
2785 K6	3768 D6	9714 I4
2786 L5	3769 C5	9715 I4
2788 B1	3770 I5	9716 H5
2789 K2	3771 J7	9717 B3
2790 D2	3772 K3	9722 F5
3701 D5	3773 K3	9723 F6
3702 F4	3774 K5	9727 L3
3703 F4	3775 K3	9731 E2
3704 E4	3778 H7	9732 L2
3705 F4	3779 B2	9733 L3
3706 E6	3780 K5	9741 B6
3709 G5	3781 I2	2394 E4
3710 G2	3782 C2	

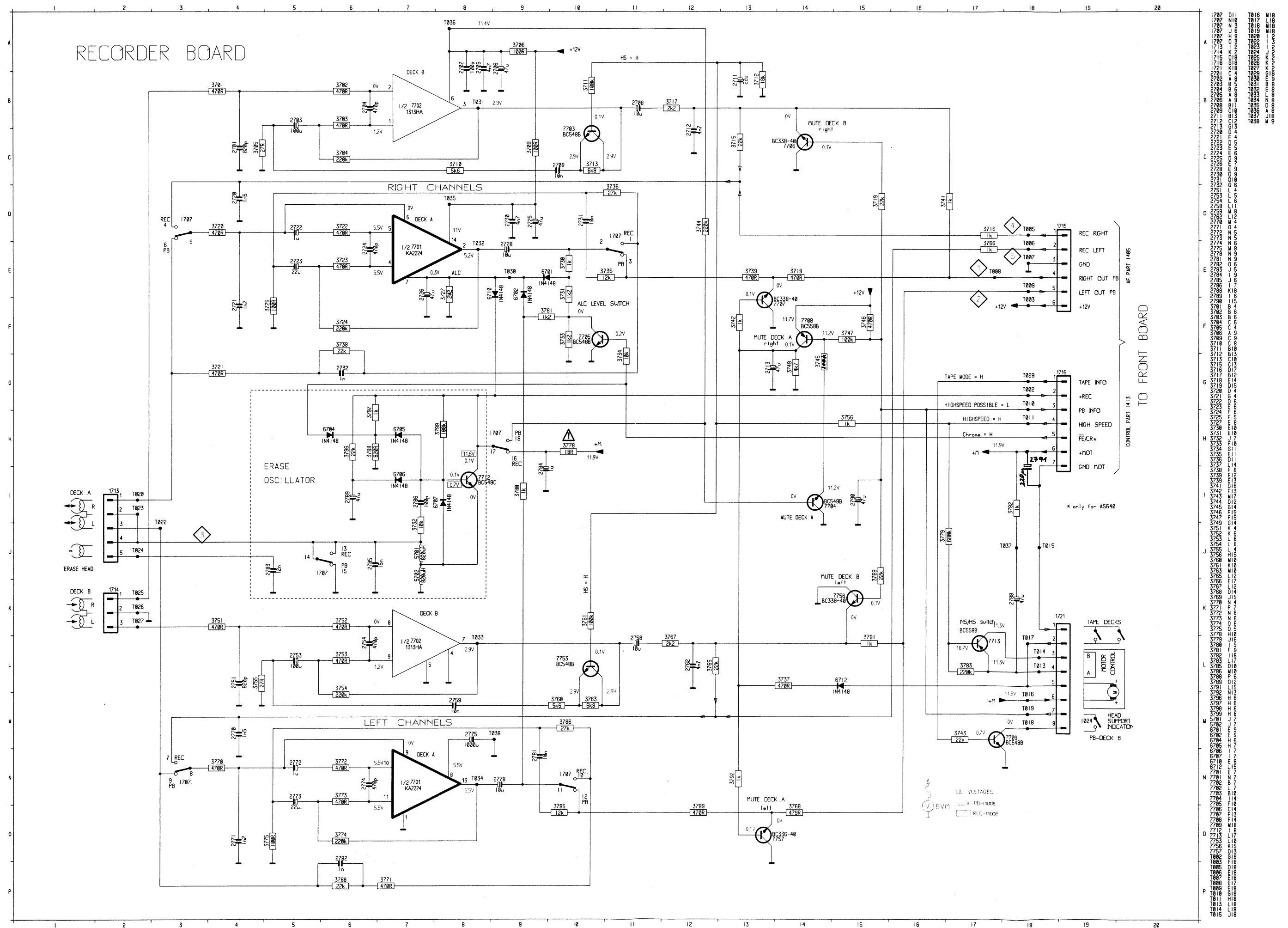
RECORDER ADJUSTMENT TABLE

Adjustment	Cassette/Source	Recorder mode	Measure on	Read on	Adjust	
					with	to
Azimuth ¹⁾	SBC 420 8kHz	PLAY A-Deck PLAY B-Deck	1 2 or Phone socket	mV - meter	left-hand screw	maximum output left = right
Motor speed ²⁾	SBC 420 3150Hz	PLAY A + B-Deck HS-Dubbing	1 2 or Phone socket	Wow and Flutter meter or Counter	pot on motor	0±1%
Normal speed				Counter	check only	5556-5783Hz
High speed ⁴⁾						

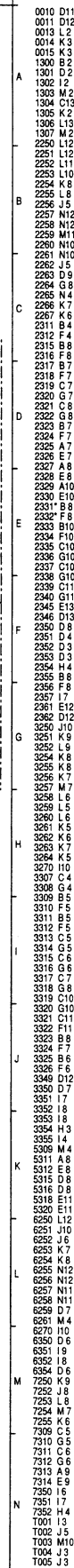
CHECK ONLY


Check	Cassette/Source	Recorder mode	Measure on	Read on	Check if
Wow and Flutter	SBC 420 3150Hz	PLAY A or B-Deck PLAY A and B-Deck	1 2 or Phone socket	Wow and Flutter meter	≤ 0,3% weighted ≤ 0,35% weighted
Erase Oscillator	any	REC A-deck	3 Erase head	mV - meter Counter	Cr ≥ 9,8Vrms Fe ≥ 20,8 Vrms f = 60kHz ± 5kHz
Voltage					
Frequency					
Playback level ³⁾	SBC420 315Hz 0dB level	PLAY A-Deck ⁵⁾ PLAY B-Deck ⁵⁾	1 2	mV - meter	41 mV - 57 mV 41 mV - 57 mV
Frequency reponse	SBC420	PLAY A or B-Deck ⁵⁾	1 2	mV - meter	125 Hz - 10 kHz within 8dB 125 Hz - 10 kHz within 8dB 125 Hz - 8 kHz dubbing
Playback					
Overall	Level = 0,5mV 4 5	REC A-Deck ⁵⁾ PLAY A-Deck ⁵⁾	1 2	mV - meter	
Distortion	SBC 420 Level = 10mV 4 5	REC A-Deck ⁵⁾ PLAY A-Deck ⁵⁾	1 2	mV - meter	50 mV ± 10 mV, D ≤ 5%

- SBC 420 Service code: 4822 397 30071
- 1) For Azimuth adjustment set need not to be dismantled. Remove ornamental part of cassette door and put screwdriver (torx5) through holes of cassette door.
- 2) Absolute difference between deck A and deck B have to be ≤2%.
- 3) Noise level in "PAUSE" should be 80 - 180µV (A-weighted).
- 4) Insert SBC420 in A-Deck and use High speed dubbing mode to check frequency.
- 5) Recorder has to be in Fe- Mode

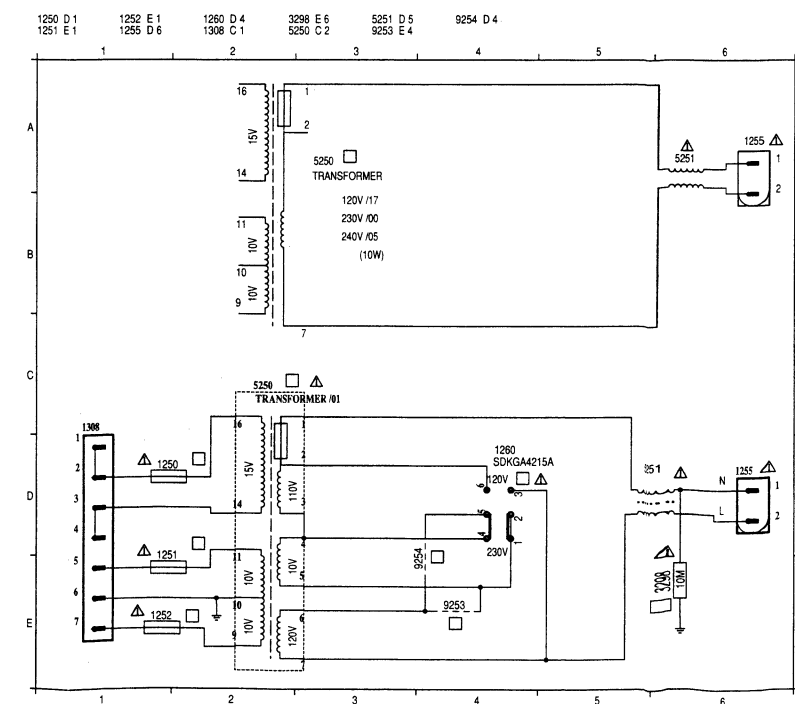


▣ COMPONENTS DEPENDING ON THE VERSION

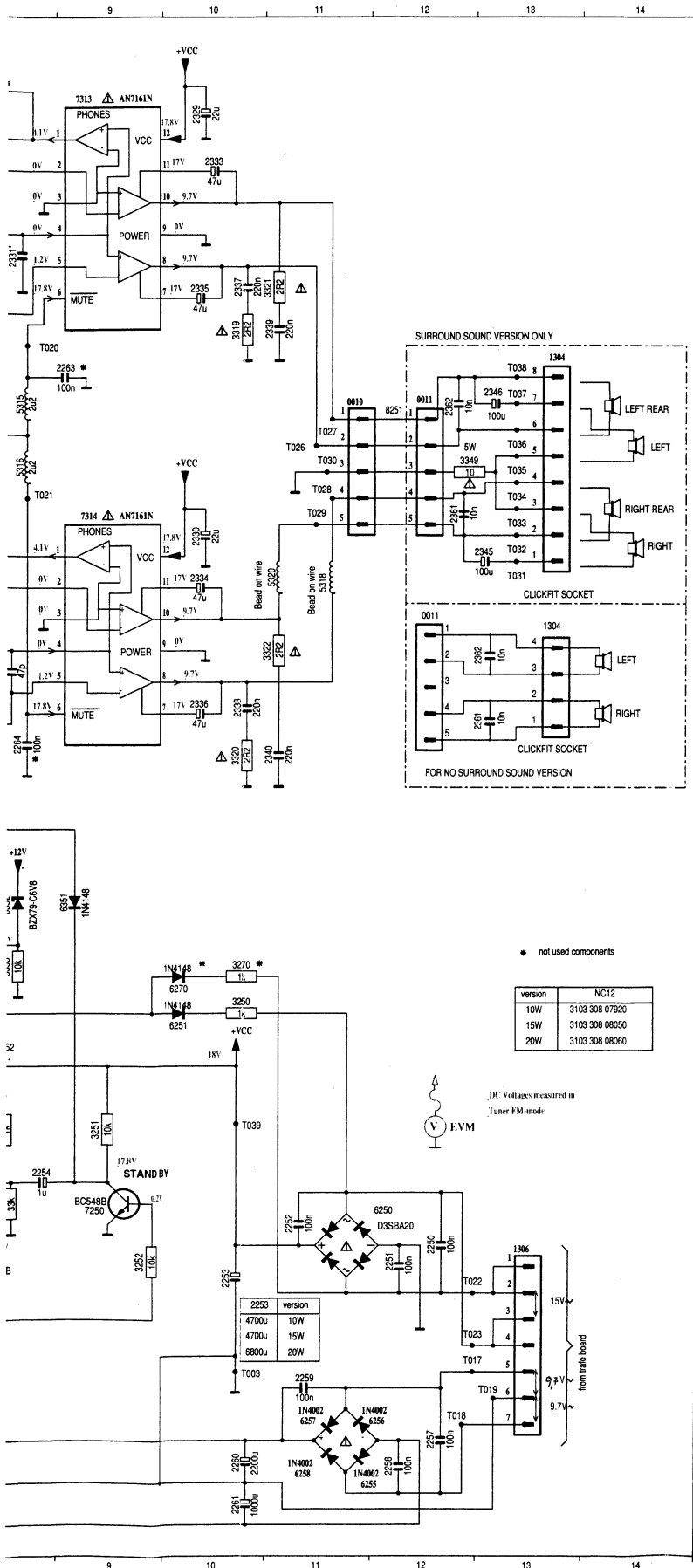


COMPONENTS						VALUE OF FUSE			
VERSION		1200	0253	0254	5250	3200	1250 (1254)	1251 (1253)	1252 (1256)
/00	(IEC 230V)				/00	5A	630mA	630mA	
/05 ¹⁾	(240V)	X			/01	5A	630mA	630mA	
/17	(UL 120V)				/17	X	5.3A	1.25A	1.25A
/01 ¹⁾ /10	(120V, 230V)	X	X		/01	5A	630mA	630mA	
/05 ¹⁾	(240V)				/05	5A	630mA	630mA	

1) for 15W and 20W versions /01 transformer
for 10W version /05 transformer



TRANSFORMER BOARD

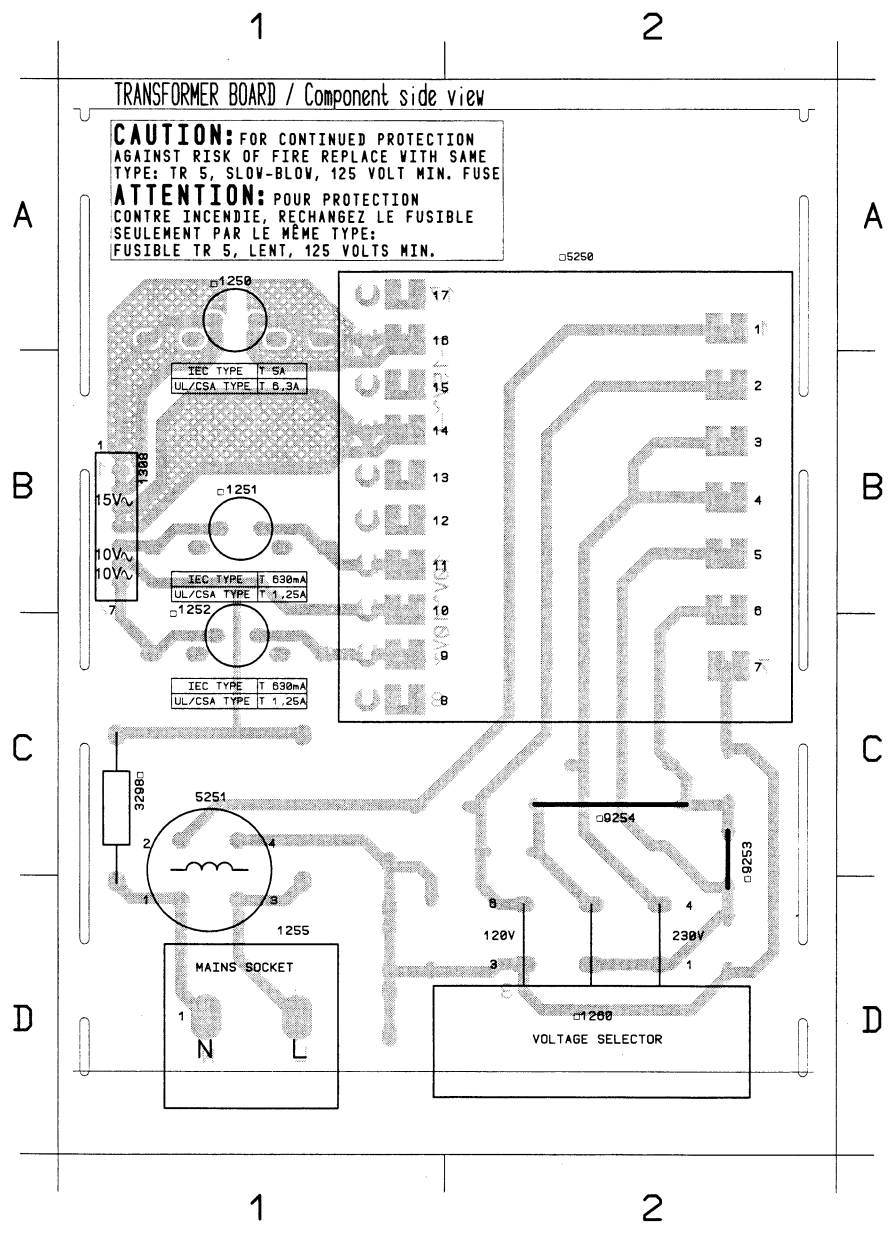
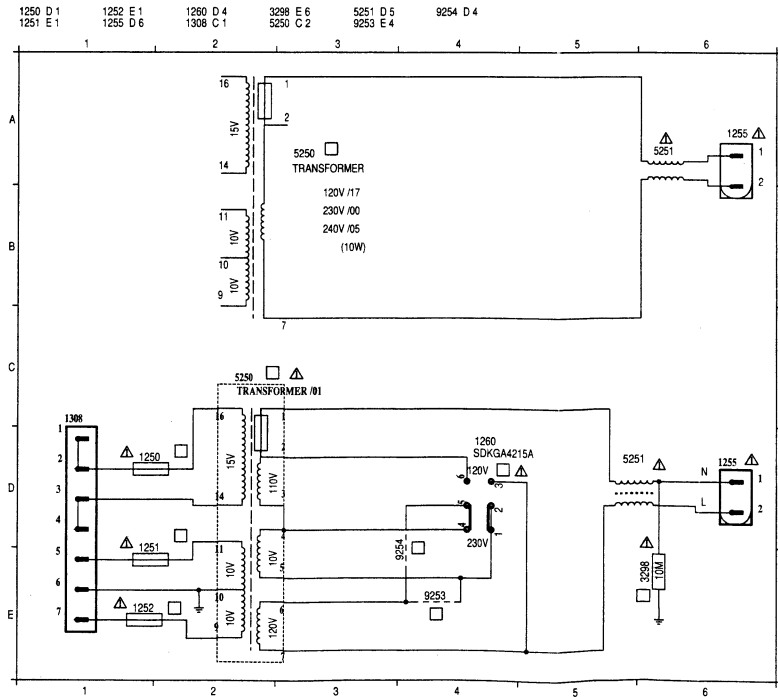


- 0010 D11
- 0011 D12
- 0013 L2
- 0014 K3
- 0015 K3
- 1300 B2
- 1301 D2
- 1302 I2
- 1303 M2
- 1304 C13
- 1305 K2
- 1306 L13
- 1307 M2
- 1308 M12
- 1309 M13
- 2251 L12
- 2252 L11
- 2253 L10
- 2254 K8
- 2255 L8
- 2256 J5
- 2257 N12
- 2258 M12
- 2259 M11
- 2260 N10
- 2261 N10
- 2262 J5
- 2263 D9
- 2264 G8
- 2265 N4
- 2266 K7
- 2267 K6
- 2268 D13
- 2269 B4
- 2270 F4
- 2271 B8
- 2272 F8
- 2273 B7
- 2274 F7
- 2275 C7
- 2276 G7
- 2277 C8
- 2278 B7
- 2279 F7
- 2280 A7
- 2281 E7
- 2282 A8
- 2283 E8
- 2284 A10
- 2285 E10
- 2286 F8
- 2287 F8
- 2288 B10
- 2289 F10
- 2290 C10
- 2291 G10
- 2292 C10
- 2293 G10
- 2294 G11
- 2295 D13
- 2296 D13
- 2297 D4
- 2298 D3
- 2299 D3
- 2300 H4
- 2301 B8
- 2302 F8
- 2303 I7
- 2304 E12
- 2305 D12
- 2306 J10
- 2307 K9
- 2308 J9
- 2309 K8
- 2310 K8
- 2311 K8
- 2312 M7
- 2313 L6
- 2314 L5
- 2315 L6
- 2316 K5
- 2317 K5
- 2318 K6
- 2319 K7
- 2320 K5
- 2321 I10
- 2322 C4
- 2323 G4
- 2324 G5
- 2325 F5
- 2326 F5
- 2327 F5
- 2328 C5
- 2329 C5
- 2330 C6
- 2331 G6
- 2332 C7
- 2333 G8
- 2334 C10
- 2335 G10
- 2336 F7
- 2337 B6
- 2338 F6
- 2339 D12
- 2340 D7
- 2341 I7
- 2342 I8
- 2343 I8
- 2344 H3
- 2345 I4
- 2346 M4
- 2347 A8
- 2348 E8
- 2349 D8
- 2350 D8
- 2351 E11
- 2352 E11
- 2353 L12
- 2354 J6
- 2355 K7
- 2356 N12
- 2357 N12
- 2358 D7
- 2359 M4
- 2360 D6
- 2361 M4
- 2362 I9
- 2363 I8
- 2364 D6
- 2365 K9
- 2366 J8
- 2367 L8
- 2368 M7
- 2369 K6
- 2370 C5
- 2371 G6
- 2372 G6
- 2373 A9
- 2374 E9
- 2375 I6
- 2376 I6
- 2377 I3
- 2378 J5
- 2379 M10
- 2380 J3
- 2381 J3

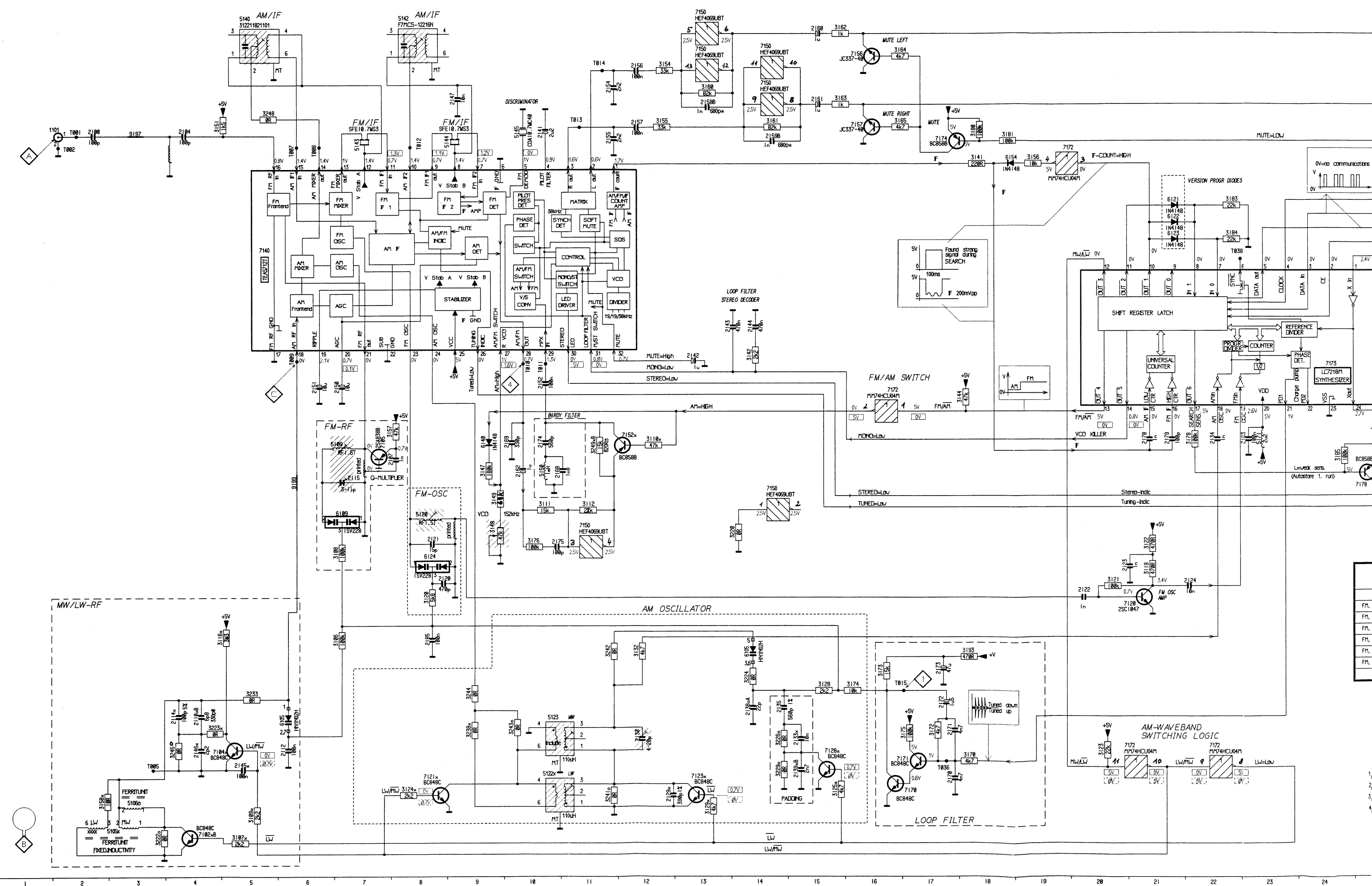
COMPONENTS DEPENDING ON THE VERSION

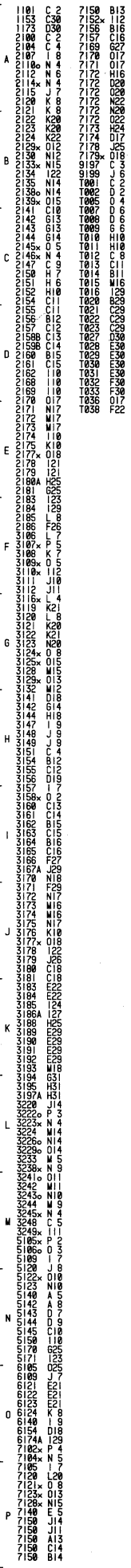
VERSION	COMPONENTS	VALUE OF FUSE
/00 (TEC 230V)	1250	5A
/05 ¹⁾ (240V)	1251	5A
/17 (UL 120V)	1252	1.25A
/01 /10 (120V, 230V)	1253	5A
/05 ¹⁾ (240V)	1254	5A

1) For 15W and 20W versions /01 transformer
for 10W version /05 transformer



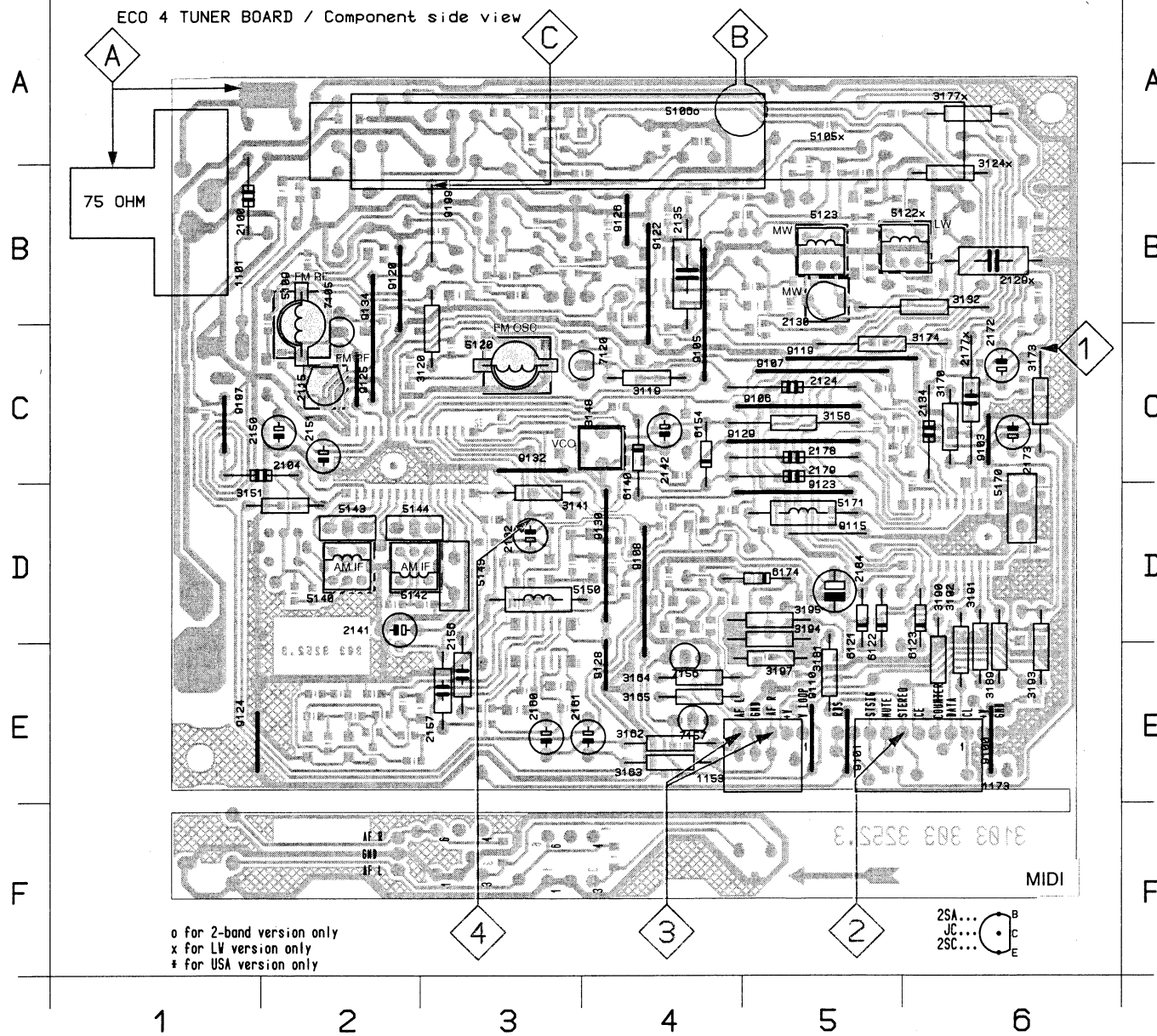
- 1250 B 1
- 1251 B 1
- 1252 C 1
- 1253 B 1
- 1254 B 1
- 1255 D 1
- 1256 C 1
- 1257 D 1
- 1258 D 1
- 1259 D 2
- 1300 B 1
- 1301 B 1
- 1302 C 1
- 1303 B 2
- 1304 C 1
- 1305 C 2
- 1306 D 2
- 1307 C 2
- 1308 C 2
- 1309 C 2
- 1310 D 1





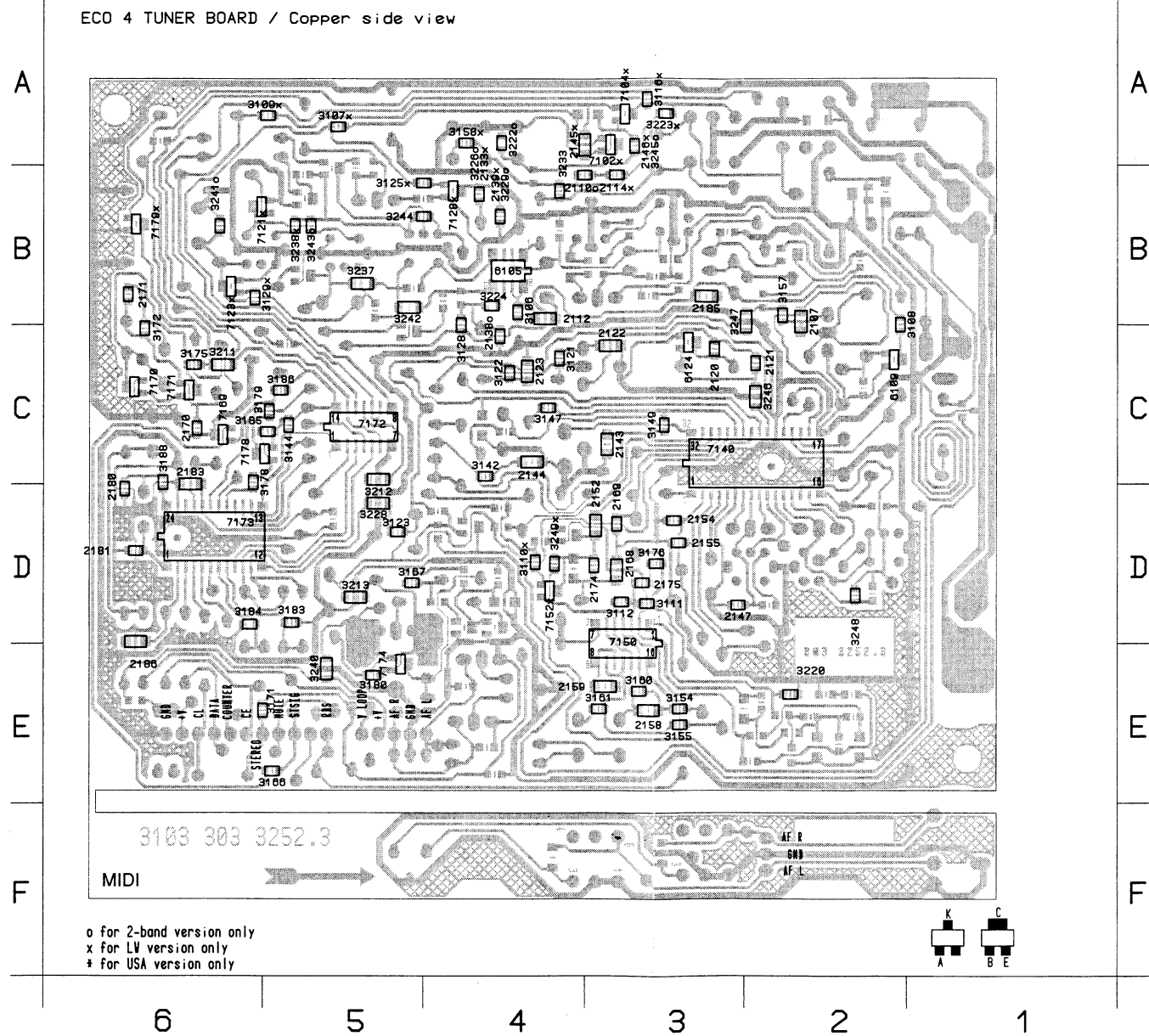
1101 B 1 2134 C 6 2101 E 4 3120 B 3 3164 E 4 3101 D 6 5120 C 3 5170 D 6 7120 C 4 9108 D 4 9126 B 4
 1153 E 5 2135 B 4 2102 D 3 3124x B 6 3105 E 4 3102 D 6 5122x B 5 5171 D 5 7150 E 4 9110 E 5 9128 D 4
 1173 E 6 2141 D 2 2172 C 6 3132 B 5 3170 C 6 3103 E 6 5123 B 5 6121 D 5 7157 E 4 9115 D 5 9120 C 4
 2100 A 1 2142 C 4 2173 C 6 3141 D 3 3173 C 6 3104 D 4 5140 D 2 6122 D 5 7158 E 4 9110 C 5 9130 D 4
 2104 C 1 2150 C 2 2177x C 6 3148 C 3 3174 C 5 3105 D 4 5142 D 3 6123 D 6 9101 E 5 9120 C 2 9132 C 3
 2115 C 2 2151 C 2 2178 C 4 3151 D 1 3177x A 6 3107 E 4 5143 D 2 6140 D 4 9103 C 6 9122 B 4 9134 B 2
 2124 C 4 2156 D 3 2179 C 4 3156 C 4 3181 D 5 5105x A 4 5144 D 2 6154 C 4 9105 C 4 9123 D 4 9107 C 1
 2129x B 6 2157 E 3 2184 D 5 3102 E 4 3180 D 6 5100 A 4 5145 D 3 6174 D 4 9106 C 4 9124 E 1 9109 B 3
 2130 B 5 2100 E 3 3119 C 4 3103 E 4 3100 D 6 5100 C 2 5150 D 3 7105 C 2 9107 C 5 9125 C 2

1 2 3 4 5 6



7171 C 6 6109 C 2 3238x B 5 3211 C 6 3171 E 5 3142 C 4 3188 B 2 2169 D 3 2139x B 4 T838 B 6 T016 A 6 T001 B 1
 7172 C 5 6124 C 3 3240 E 5 3212 C 5 3172 C 6 3144 C 5 3189x A 5 2170 C 6 2143 C 3 T838 D 6 T020 E 4 T002 B 1
 7173 D 6 7102x A 3 3241o B 6 3213 D 5 3175 C 6 3147 C 4 3110x D 4 2171 B 6 2144 C 4 2107 B 2 T021 E 4 T005 E 1
 7174 E 5 7104x A 3 3242 B 5 3220 E 2 3176 D 3 3149 C 3 3111 D 3 2174 D 3 2145x A 3 2110x B 3 T022 E 5 T007 D 2
 7178 C 5 7121x B 6 3243o B 5 3222o A 4 3178 C 6 3154 E 3 3112 D 3 2175 D 3 2146x A 3 2112 B 4 T023 D 5 T008 D 2
 7179x B 6 7123x B 4 3244x A 3 3223x A 3 3179 C 5 3155 E 3 3116x A 3 2180 D 6 2147 D 3 2114x B 3 T027 E 6 T009 B 2
 7128x B 4 3245x A 3 3224 B 4 3180 E 5 3157 B 2 3121 C 4 2181 D 6 2152 D 3 2120 C 3 T028 E 6 T010 D 3
 7140 C 2 3246 C 2 3226o B 4 3183 D 5 3158x A 4 3122 C 4 2183 C 6 2154 D 3 2121 C 2 T029 E 6 T011 C 3
 7150 D 3 3247 B 2 3228 D 5 3184 D 6 3106 E 3 3123 D 5 2185 B 3 2155 D 3 2122 C 3 T030 E 6 T012 D 2
 7152x D 4 3248 D 2 3229o B 4 3185 C 5 3101 E 3 3125x B 4 2186 D 6 2158 E 3 2123 C 4 T031 E 6 T013 E 2
 7169 C 6 3249x D 4 3233 B 4 3186 C 5 3106 E 5 3126 B 4 2187 B 4 2159 E 3 2133x B 4 T032 E 5 T014 D 3
 7170 C 6 6105 B 4 3237 B 5 3188 C 6 3167 D 5 3129x B 6 3107x A 5 2168 D 3 2136o C 4 T033 E 5 T015 C 6

6 5 4 3 2 1



TUNER

W

VARICA

FM /00/

87.5 -

FM /14

65.81

MW /01

2-band ver
530 -

LW /00/

153 -

MW /00

522 -

FM - R1

FM /00/

FM /14

East I

VCO

FM

AM - IF

MW

AM - R1

LW

MW /00

3-ba

MW /01

2-ba

* Use Se

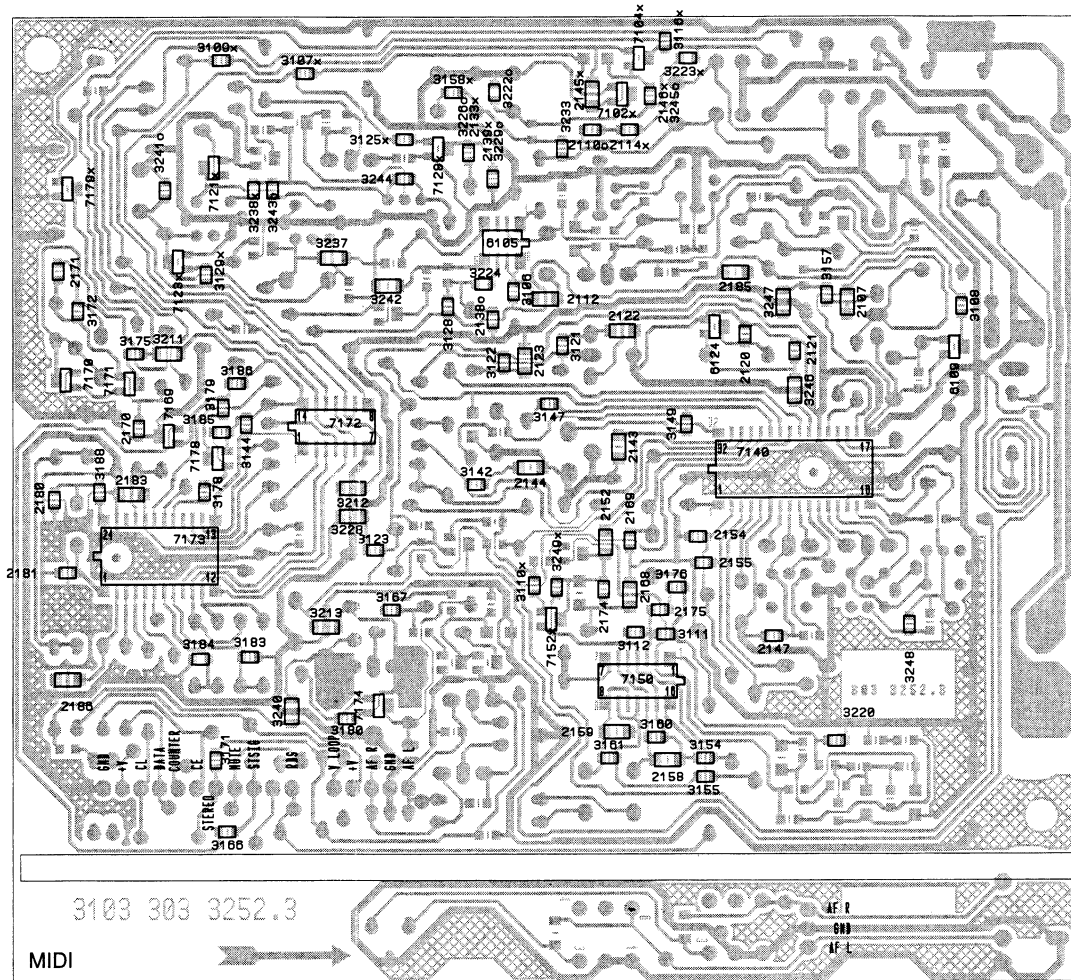
1) Adjust

bracke

repeat

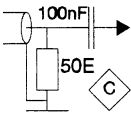
7171 C 6	6100 C 2	3238x B 5	3211 C 6	3171 E 5	3142 C 4	3108 B 2	2109 D 3	2139x B 4	T036 B 6	T016 A 6	T001 B 1
7172 C 5	6124 C 3	3240 E 5	3212 C 5	3172 C 6	3144 C 5	3109x A 5	2170 C 6	2143 C 3	T038 D 6	T020 E 4	T002 B 1
7173 D 6	7102x A 3	3241o B 6	3213 D 5	3175 C 6	3147 C 4	3110x D 4	2171 B 6	2144 C 4	2107 B 2	T021 E 4	T005 E 1
7174 E 5	7104x A 3	3242 B 5	3220 E 2	3176 D 3	3149 C 3	3111 D 3	2174 D 3	2145x A 3	2110o B 3	T022 E 5	T007 D 2
7175 C 5	7121x B 6	3243o B 5	3222o A 4	3178 C 6	3154 E 3	3112 D 3	2175 D 3	2148x A 3	2112 B 4	T023 D 5	T008 D 2
7176x B 6	7123x B 6	3244 B 4	3223x A 3	3179 C 5	3155 E 3	3116x A 3	2180 D 6	2147 D 3	2114x B 3	T027 E 6	T009 B 2
	7128x B 4	3245x A 3	3224 B 4	3180 E 5	3157 B 2	3121 C 4	2181 D 6	2152 D 3	2120 C 3	T028 E 6	T010 D 3
	7140 C 2	3246 C 2	3226o B 4	3183 D 5	3158x A 4	3122 C 4	2183 C 6	2154 D 3	2121 C 2	T029 E 6	T011 C 3
	7150 D 3	3247 B 2	3228 D 5	3184 D 6	3160 E 3	3123 D 5	2185 B 3	2155 D 3	2122 C 3	T030 E 6	T012 D 2
	7152x D 4	3248 D 2	3229o B 4	3185 C 5	3161 E 3	3125x B 4	2186 D 6	2158 E 3	2123 C 4	T031 E 6	T013 E 2
	7169 C 6	3249x D 4	3233 B 4	3186 C 5	3166 E 5	3128 B 4	3186 B 4	2159 E 3	2133x B 4	T032 E 5	T014 D 3
	7170 C 6	6185 B 4	3237 B 5	3188 C 6	3167 D 5	3129x B 6	3107x A 5	2168 D 3	2138o C 4	T033 E 5	T015 C 6

ECO 4 TUNER BOARD / Copper side view



o for 2-band version only
x for LW version only
* for USA version only

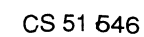
TUNER Adjustment table (ECO 4 FM/MW- and FM/MW/LW - versions with AM-ferrite antenna)

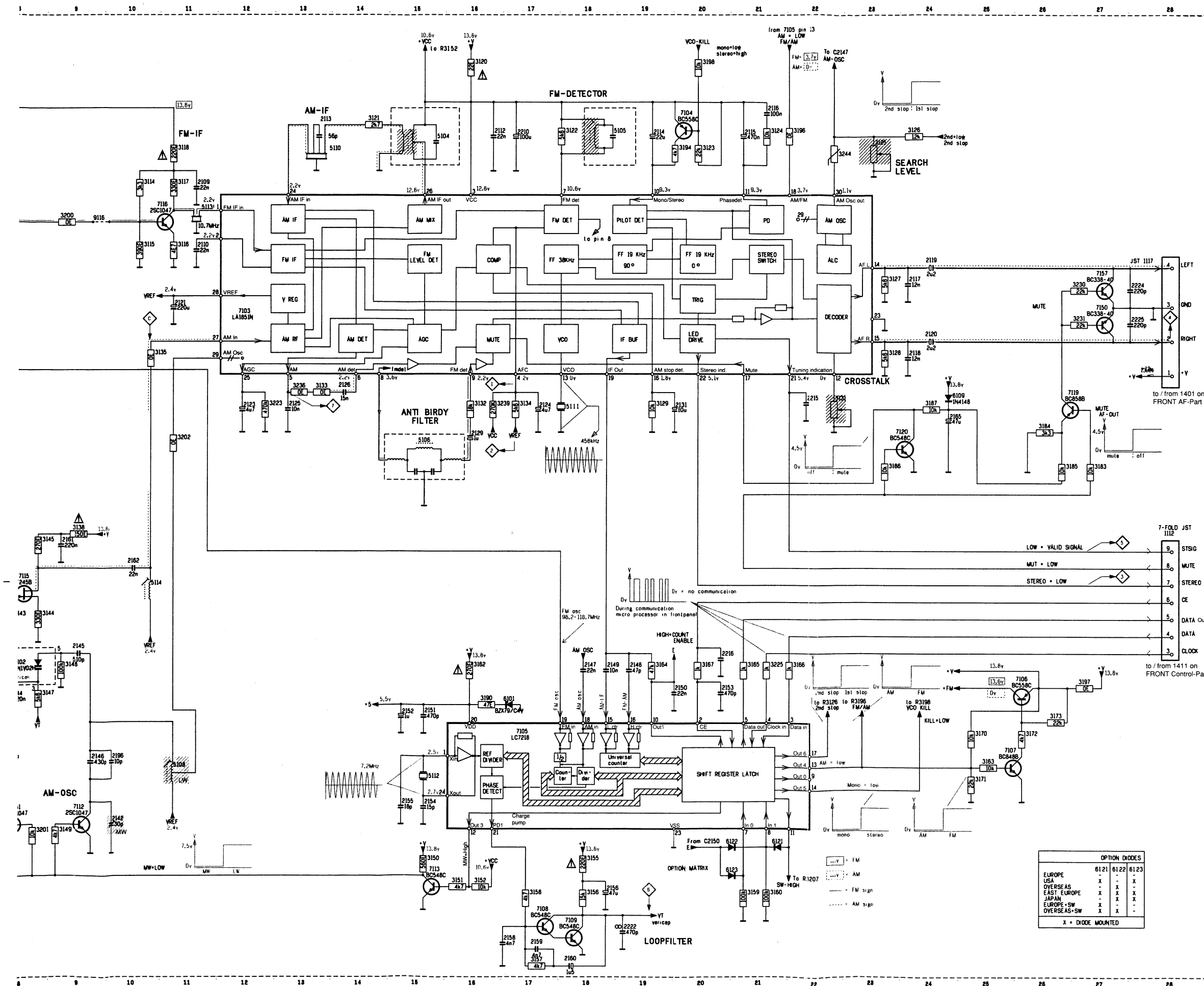
Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT * 1)						
FM /00/01/05/10/17 87.5 - 108MHz			108 MHz	5120	1	8V ± 0.2V
			87.5MHz	check		4.1V ± 0.5V
FM /14 East Europe 65.81 - 108MHz			108 MHz	5120		8V ± 0.2V
			65.81 MHz	check		0.8V ± 0.4V
MW /01/17 2-band version, 10kHz grid 530 - 1710kHz			1710kHz	5123		9V±0.1V (7.5±0.7V) ¹⁾
			530kHz	check		1V±0.4V (1.1±0.5V) ¹⁾
LW /00/05/10/14 153 - 279kHz			279kHz	5122		8V±0.2V (7.5±1.5V) ¹⁾
			153kHz	check		1V±0.4V (1.1±0.5V) ¹⁾
MW /00/05/10/14 522 - 1611kHz			1611kHz	5123		8V±0.1V (7.5±0.5V) ¹⁾
			522kHz	check		1V±0.4V (1.1±0.5V) ¹⁾
FM - RF						
FM /00/01/05/10/17	108MHz	A mod=1kHz Δf=22.5kHz	108MHz	2115	3	MAX ↕
	87.5MHz		87.5MHz	5109		
FM /14 East Europe	108MHz		108MHz	2115		
	65.81MHz		65.81MHz	5109		
VCO						
FM	98 MHz, 1mV continuous wave	A	98MHz	3148	2	152kHz ± 1kHz
AM - IF						
MW	540kHz Δf = 10kHz as low as possible		540kHz	5142 5140	4	symmetrical and max height
AM - RF						
LW	198kHz	B' mod=1kHz 30% AM	198kHz	5122	4	MAX
MW /00/05/10/14 3-band version	1494kHz		1494kHz	2130		MAX ↕
	549kHz		549kHz	5123		
MW /01/17 2-band version	1500kHz		1500kHz	2130		
	550kHz		550kHz	5123		

* Use Service Test Program. By selecting the TUNER TEST, test frequencies will be stored as preset frequ. automatically.

1) Adjustment of AM-RF stage influences the varicap voltage. Therefore check if varicap voltage fulfils value stated within brackets after AM-RF adjustment.

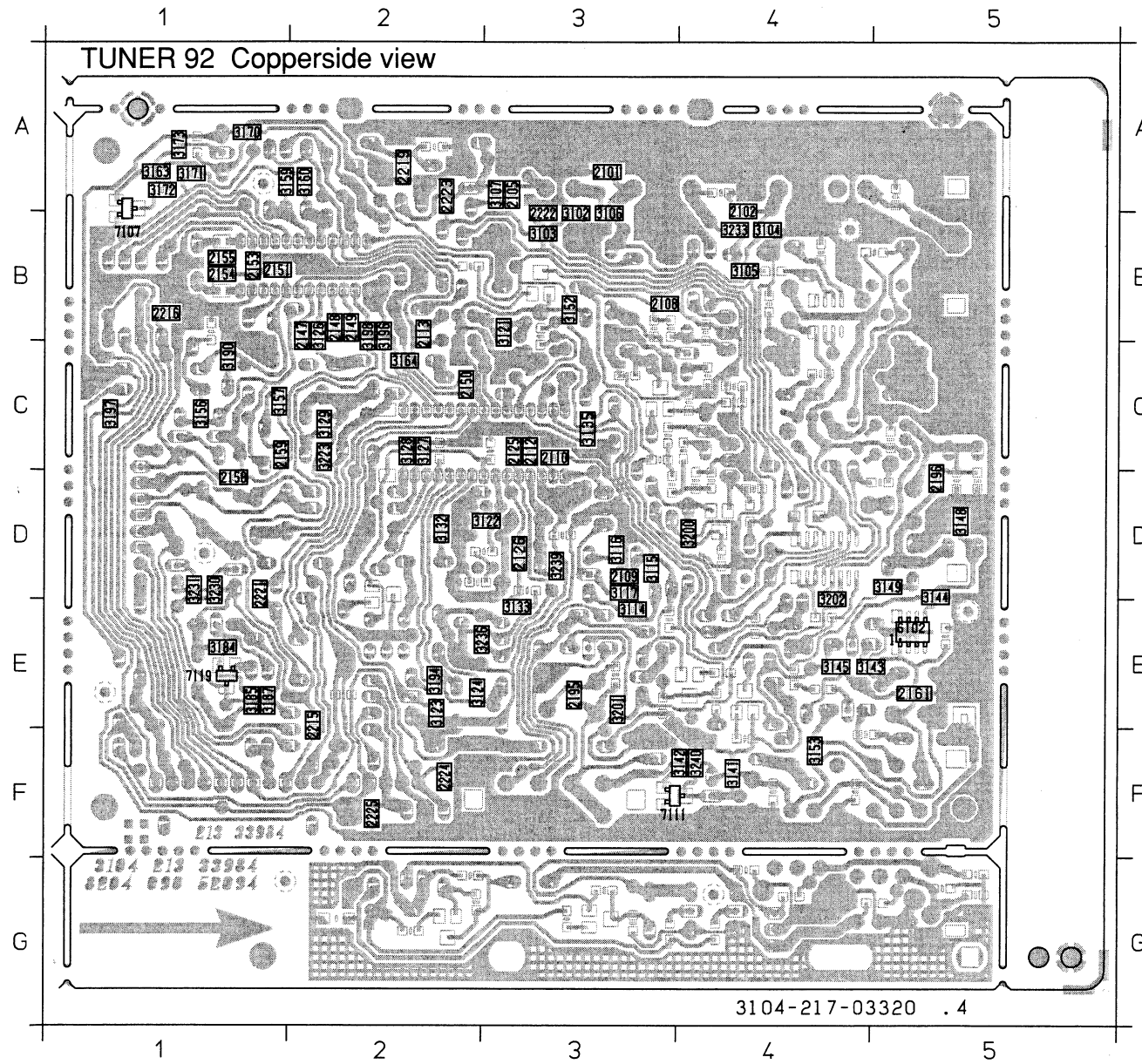
↑ repeat



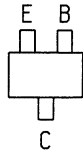
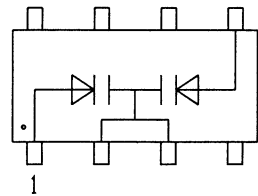


1101 02 5104 B15
2101 C1 5105 B18
2102 C2 5106 H15
2103 C1 5111 B18
2104 E2 5111 B18
2105 F3 5112 H15
2107 F4 5127 K7
2108 B4 6101 L17
2109 C11 6102 K8
2110 D11 6109 G24
2112 B16 6121 D21
2113 B13 6122 D21
2114 B19 6123 D21
2115 B21 7101 F4
2116 B21 7103 E12
2117 E24 7104 B20
2118 F24 7105 H17
2119 D24 7106 L26
2120 F24 7107 H25
2121 E11 7108 P17
2123 G12 7109 P18
2124 G17 7111 D5
2125 G13 7112 W9
2126 G14 7113 D15
2129 B16 7114 M6
2131 G20 7115 J8
2141 K7 7116 C11
2142 M10 7119 G27
2144 L8 7120 G24
2145 K9 7150 E27
2146 B9 7151 W8
2147 K18 7157 E27
2148 K19 9116 D9
2149 K18 9117 D5
2150 L20
2151 L15
2152 L15
2153 L20
2154 M15
2155 M15
2156 D18
2158 P17
2159 P17
2160 P18
2161 J9
2162 J10
2165 G24
2193 M7
2194 M7
2195 M8
2196 M10
2197 M10
2210 B17
2215 G22
2216 K20
2219 F4
2221 G12
2222 P19
2223 B3
2224 E28
2225 L28
3101 B1
3102 C2
3103 B2
3104 C2
3105 E1
3106 D2
3107 F3
3108 E4
3113 B4
3114 C10
3115 D10
3116 D11
3117 C11
3118 B11
3120 R16
3121 B14
3122 B18
3123 B20
3124 B21
3126 B24
3127 E23
3128 F23
3129 G19
3132 G16
3133 G13
3134 D17
3135 F10
3138 J9
3141 M5
3142 D6
3143 K8
3144 K8
3145 L8
3147 L8
3148 K9
3149 W9
3150 D15
3151 D16
3152 D16
3153 L6
3155 D18
3156 D18
3157 P17
3158 D17
3159 D21
3160 D21
3162 K16
3163 M25
3164 K19
3165 K21
3166 K22
3167 K20
3170 M25
3171 M25
3172 M26
3173 L26
3183 M27
3184 G26
3185 M26
3186 M23
3187 G24
3190 L16
3194 B20
3196 B22
3197 L27
3198 R20
3200 D9
3201 M8
3202 G11
3223 G12
3225 K21
3230 E27
3231 E27
3233 D1
3236 G13
3239 D16
3240 M5
3244 B22

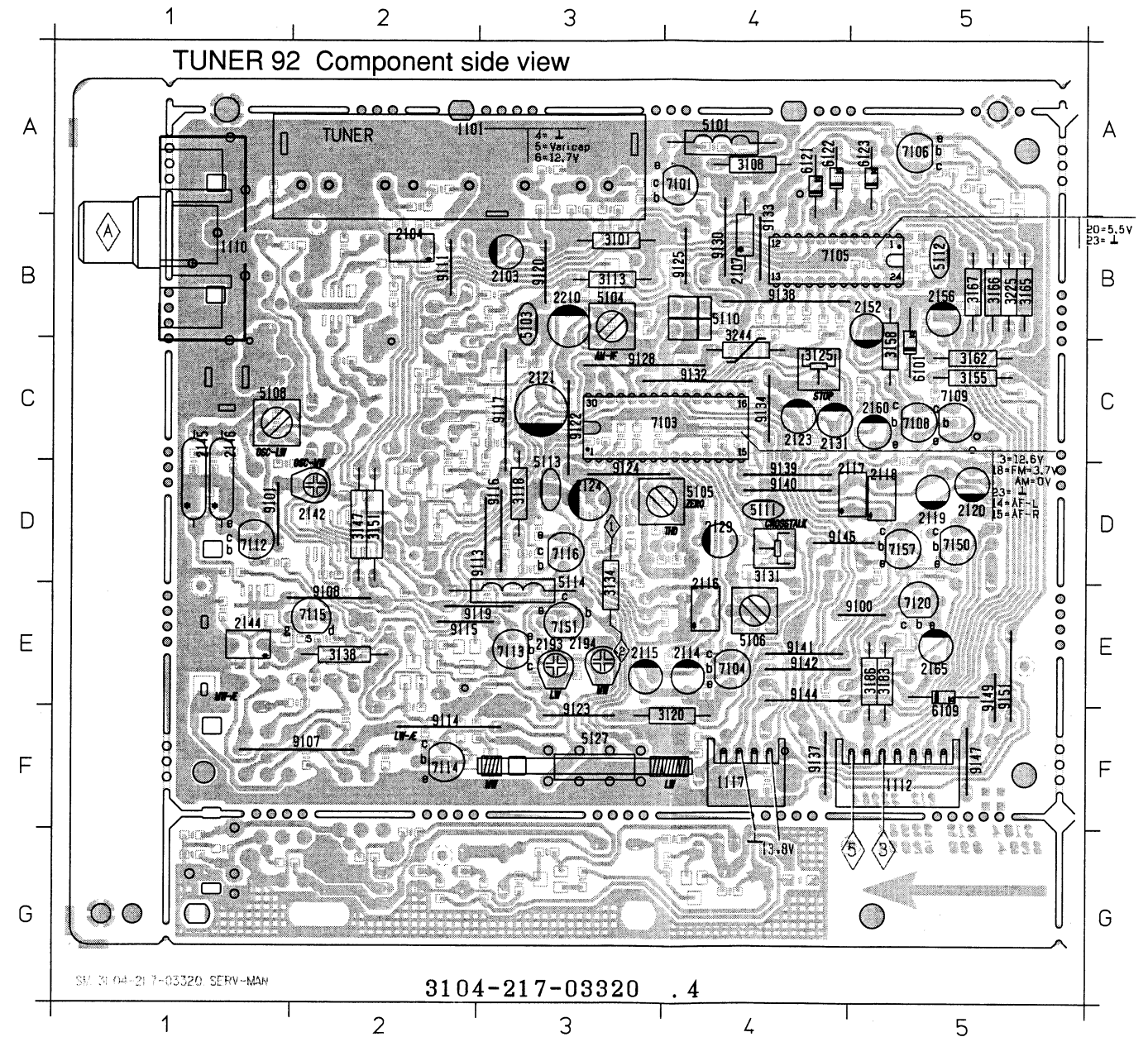
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2102 B4	2126 D3	2155 B1	2219 A2	3104 B4	3121 B3	3132 D2	3148 D5	3163 A1	3187 E1	3202 E4	6102 E5
2105 A3	2147 B2	2158 D1	2221 D1	3105 B4	3122 D3	3133 E3	3149 D5	3164 C2	3190 C1	3223 C2	7107 B1
2108 B3	2148 B2	2159 C1	2222 B3	3106 B3	3123 E3	3135 C3	3152 B3	3170 A1	3194 B2	3230 D1	7111 F3
2109 D3	2149 B2	2161 E5	2223 A2	3107 A3	3124 E3	3141 F4	3153 F4	3171 A1	3196 B2	3231 D1	7119 E1
2110 C3	2150 C2	2195 E3	2224 F2	3114 E3	3126 B2	3142 F4	3156 C1	3172 A1	3197 C1	3233 B4	TUNER A1
2112 C3	2151 B1	2196 D5	2225 F2	3115 D3	3127 C2	3143 E5	3157 C1	3173 A1	3198 B2	3236 E3	
2113 B2	2153 B1	2215 E2	3102 B3	3116 D3	3128 C2	3144 E5	3159 A2	3184 E1	3200 D4	3239 D3	



IC 6102 - 6105



1101 A2	2119 D5	2156 B5	3131 D4	3186 E5	5113 D3	7106 A5	9100 E5	9122 C3	9140 D4
1110 B1	2120 D5	2160 C5	3134 D3	3225 B5	5114 E3	7108 C5	9101 D1	9123 F3	9141 E4
1112 F5	2121 C3	2165 E5	3138 E2	3244 C4	5127 F3	7109 C5	9107 F2	9124 D3	9142 E4
1117 F4	2123 C4	2193 E3	3147 D2	5101 A4	6101 C5	7112 D1	9108 E2	9125 B4	9144 E4
2103 B3	2124 D3	2194 E3	3151 D2	5103 B3	6109 F5	7113 E3	9111 B2	9126 C3	9146 D4
2104 B2	2129 D4	2210 B3	3155 C5	5104 B3	6121 A4	7114 F2	9113 D3	9130 B4	9147 F5
2107 B4	2131 C4	3101 B3	3158 C5	5105 D4	6122 A4	7115 E2	9114 F2	9132 C4	9149 E5
2114 E4	2142 D2	3108 A4	3162 C5	5106 E4	6123 A5	7116 D3	9115 E2	9133 B4	
2115 E3	2144 E1	3113 B3	3165 B5	5108 C1	7101 A4	7120 E5	9116 D3	9134 C4	
2116 E4	2145 C1	3118 D3	3166 B5	5110 B4	7103 C4	7150 D5	9117 C3	9137 F4	
2117 D5	2146 C1	3120 F4	3167 B5	5111 D4	7104 E4	7151 E3	9119 E3	9138 B4	
2118 D5	2152 B5	3125 C4	3183 E5	5112 B5	7105 B4	7157 D5	9120 B3	9139 D4	



TUNER 92

Wave

VARICAP

FM

87.5 - 1

AM

2-band version,
530 - 1

LW

153 - 27

MW

522 - 16

FM IF

FM

STEREO

FM

SEARCH

FM

AM - IF

MW

AM RF

AM

2-band version
m=30%, 1

LW

m=30%, 1

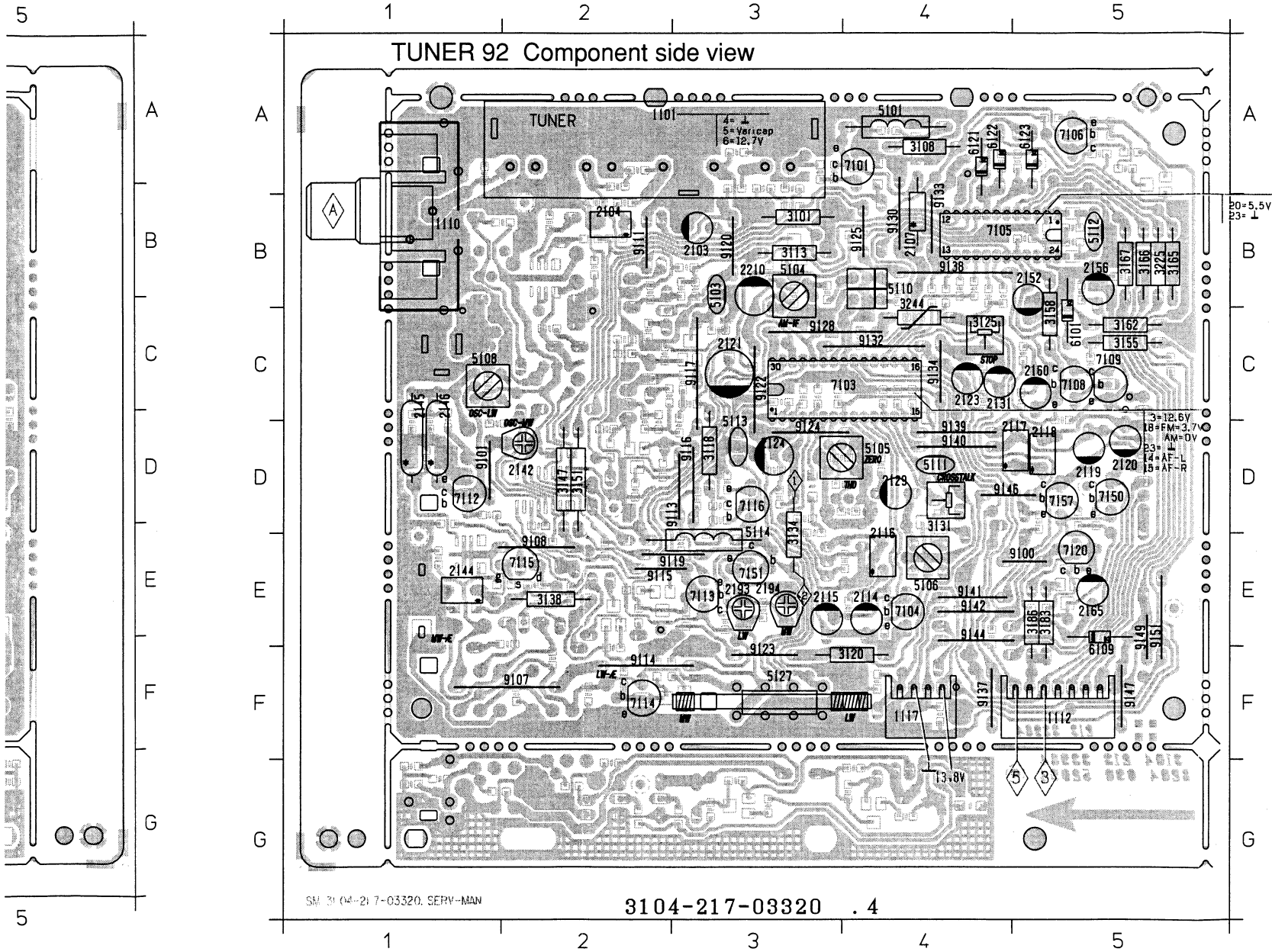
MW

m=30%, 1

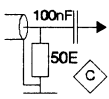

repeat

E3 3240 F4
E4 6102 E5
C2 7107 B1
D1 7111 F3
D1 7119 E1
B4 TUNER A1
E3
D3

1101 A2 2119 D5 2156 B5 3131 D4 3186 E5 5113 D3 7106 A5 9100 E5 9122 C3 9140 D4
1110 B1 2120 D5 2160 C5 3134 D3 3225 B5 5114 E3 7108 C5 9101 D1 9123 F3 9141 E4
1112 F5 2121 C3 2165 E5 3138 E2 3244 C4 5127 F3 7109 C5 9107 F3 9124 D3 9142 E4
1117 F4 2123 C4 2193 E3 3147 D2 5101 A4 6101 C5 7112 D1 9108 B5 9125 B4 9144 E4
2103 B3 2124 C3 2194 E3 3151 D2 5103 B3 6109 F5 7113 F3 9111 B5 9126 C3 9146 D4
2104 B2 2129 D4 2210 E3 3155 C5 5105 D3 6121 A4 7114 F3 9113 D3 9130 B4 9147 F5
2107 B4 2131 C4 3101 B3 3158 C5 5105 D3 6122 A4 7115 E2 9114 F3 9132 C4 9149 E5
2114 E4 2142 D2 3108 A4 3162 C5 5106 E4 6123 A5 7116 D3 9115 E3 9133 B4 9151 E5
2115 E3 2144 E1 3113 B3 3165 B5 5108 C1 7101 A4 7120 E5 9116 D3 9134 C4
2116 F4 2145 C1 3118 D3 3166 B5 5110 B4 7103 C4 7150 D5 9117 C3 9137 F4
2117 D5 2146 C1 3120 F4 3167 B5 5111 D4 7104 E4 7151 E3 9119 E3 9138 B4
2118 D5 2152 B5 3125 C4 3183 E5 5112 B5 7105 B4 7157 D5 9120 B3 9139 D4

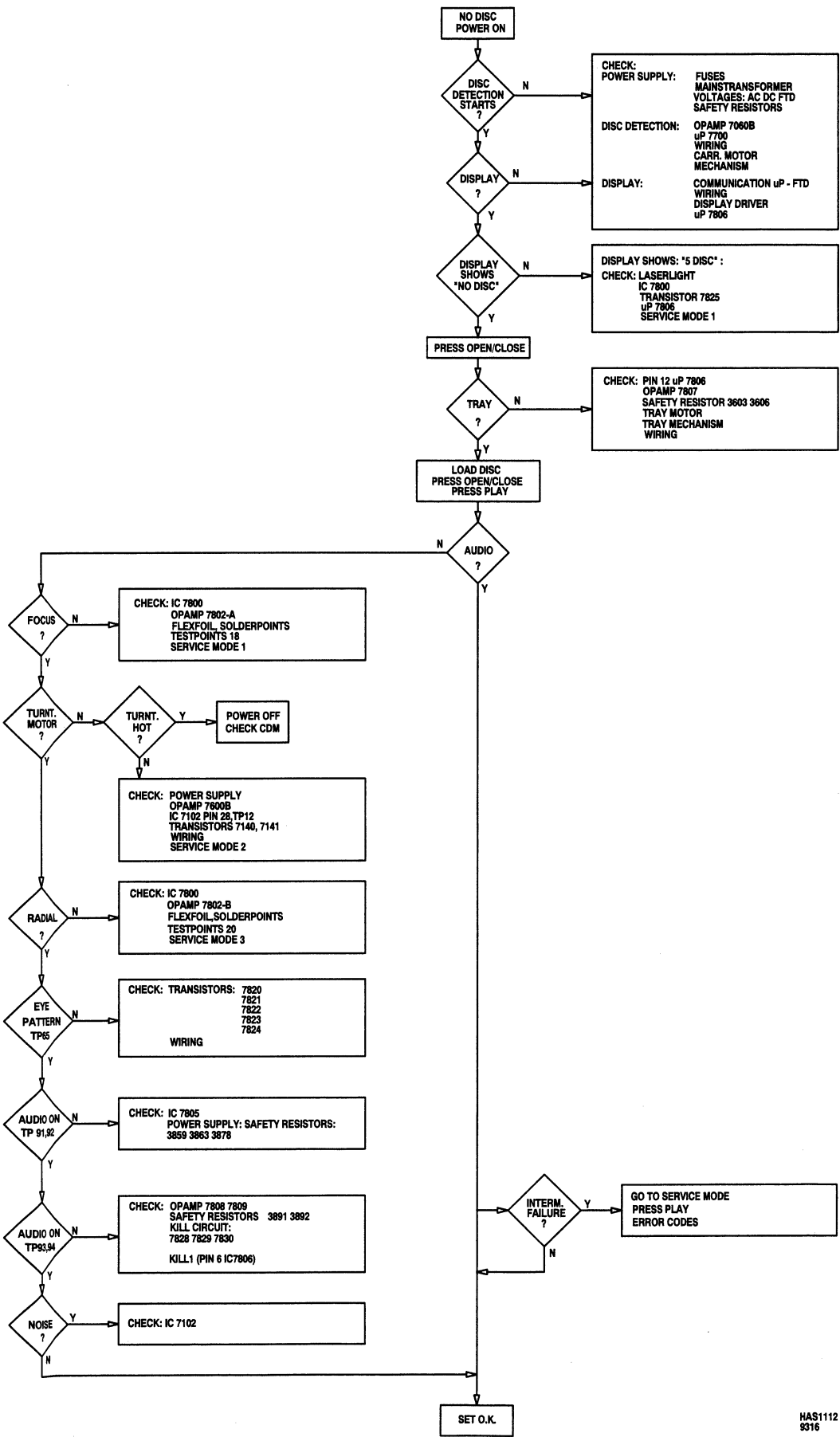


TUNER 92 Adjustment table (FM, MW - and FM, MW, LW - versions with AM ferrite antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM			108 MHz	check	6	7....9V
87.5 - 108MHz			87.5MHz	check		1.3....2V
AM 2-band version, 10kHz grid 530 - 1710kHz			1710kHz	5108		8.5V ± 0.1V
			530kHz	check		1V ± 0.3V
LW			279kHz	5108		8.5V ± 0.1V
	153 - 279kHz		153kHz	check		1V ± 0.1V
MW			1611kHz	2142		8.5V ± 0.1V
	522 - 1611kHz		522kHz	check		1.1V ± 0.3V
FM IF						
FM	98 MHz, 1mV mod = 1kHz Δf = 75kHz	A	98MHz	5105	1 2	0V ± 20mV
STEREO CROSSTALK						
FM	98 MHz, 1mV 90% Left +9% pilot	A	98MHz	check	3	low < 1V
				3131	4	Right channel minimum
SEARCH SENSITIVITY						
FM	98 MHz, 15μV mod = 1kHz Δf = 75kHz	A	98MHz	3125	5	Switches just from High to Low
AM - IF						
MW	1494kHz Δf = 10kHz as low as possible		1494kHz	5104	7	symmetrical and max height
AM RF						
AM 2-band version, 10kHz grid m=30%, 1kHz	560kHz	B	560kHz	5107	7	MAX. 
	1600kHz		1600kHz	2141		
LW m=30%, 1kHz	155kHz		155kHz	5127 LW		
	270kHz		270kHz	2193		
MW	558kHz		558kHz	5127 MW		
	1494kHz		1494kHz	2194		

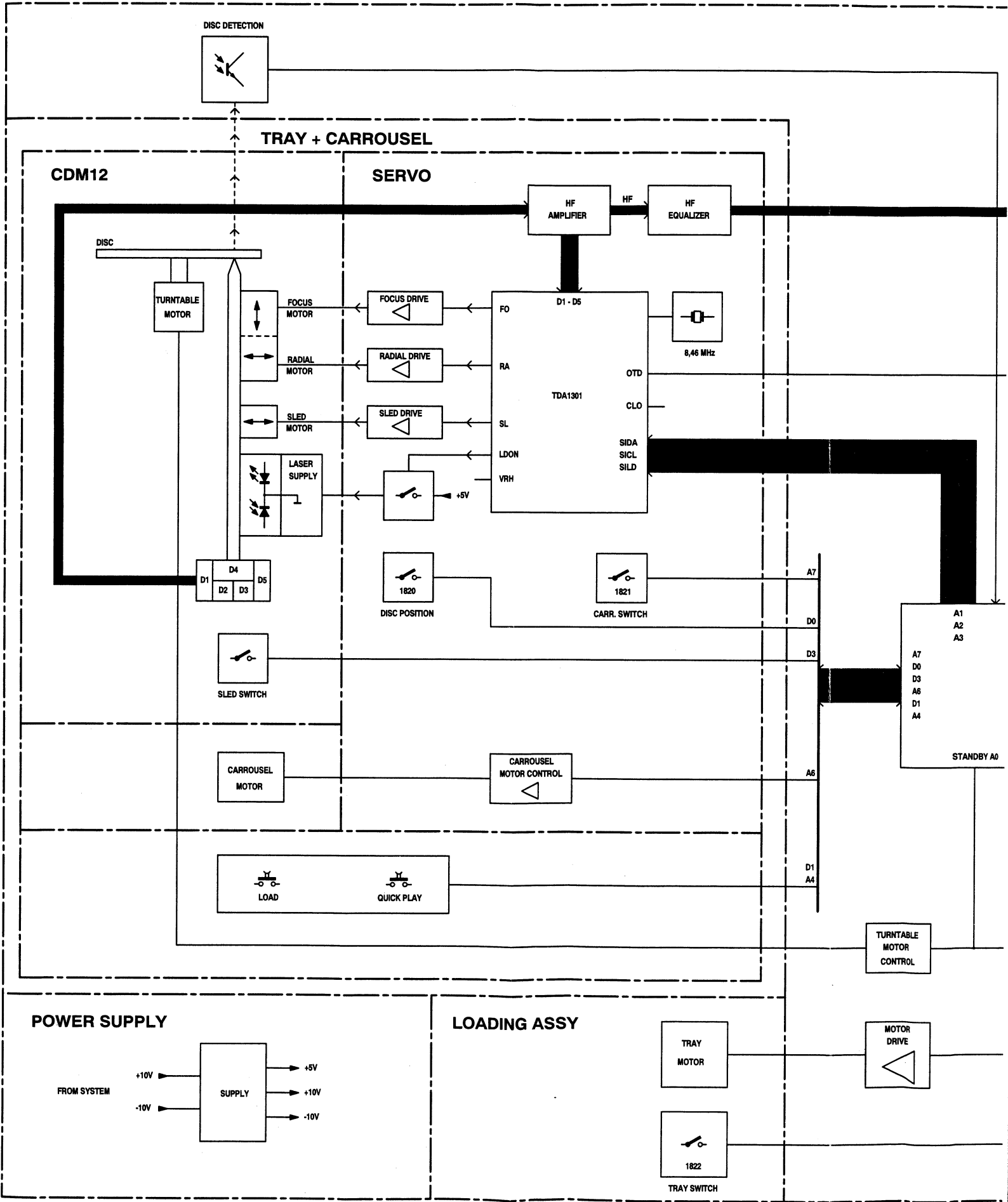
↑
repeat
↓

FAULT FINDING TREE - CD PART

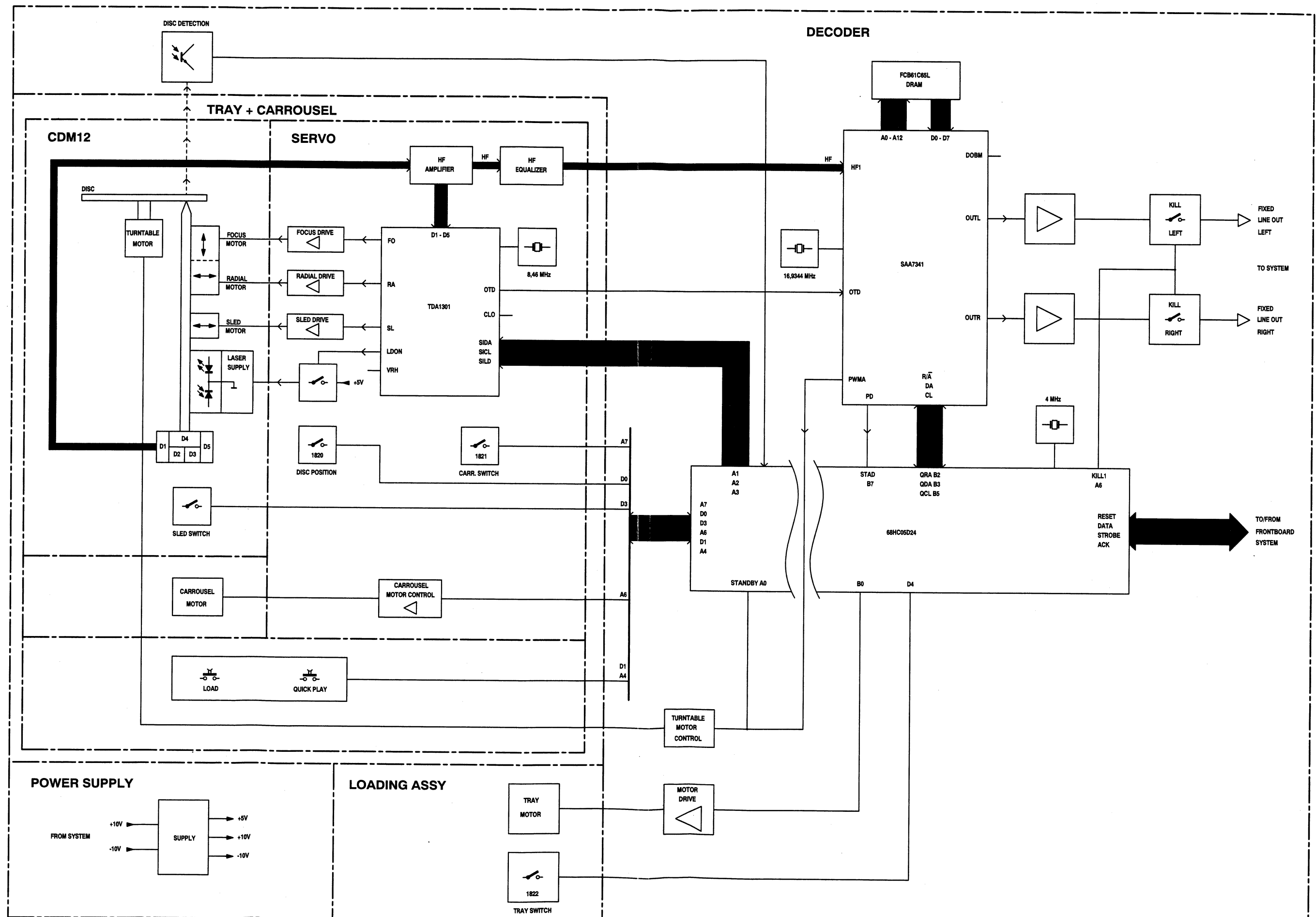


HAS1112
9316

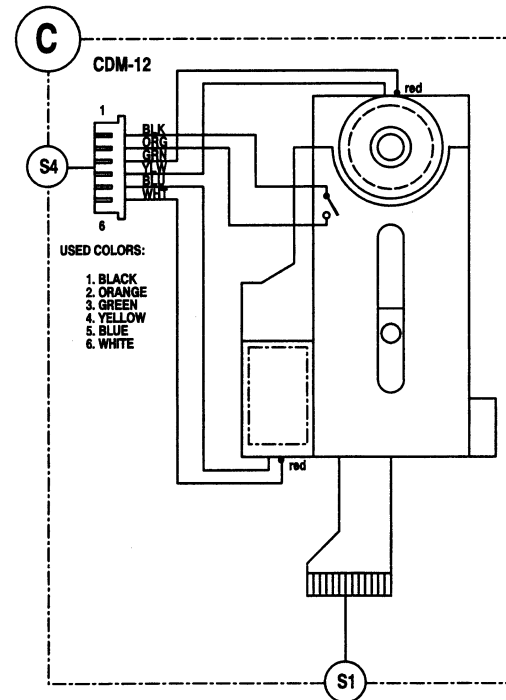
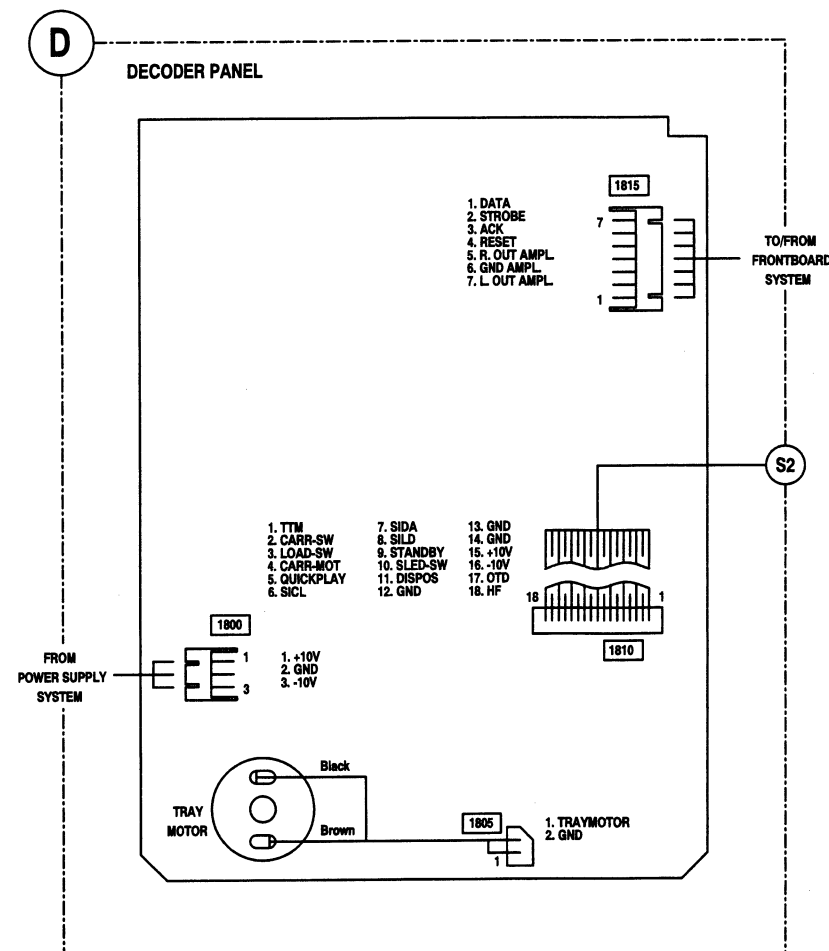
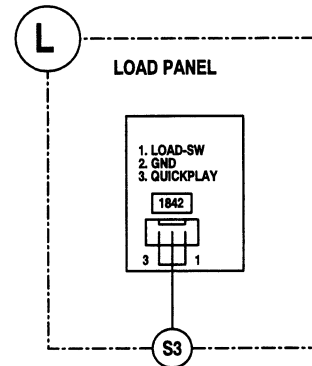
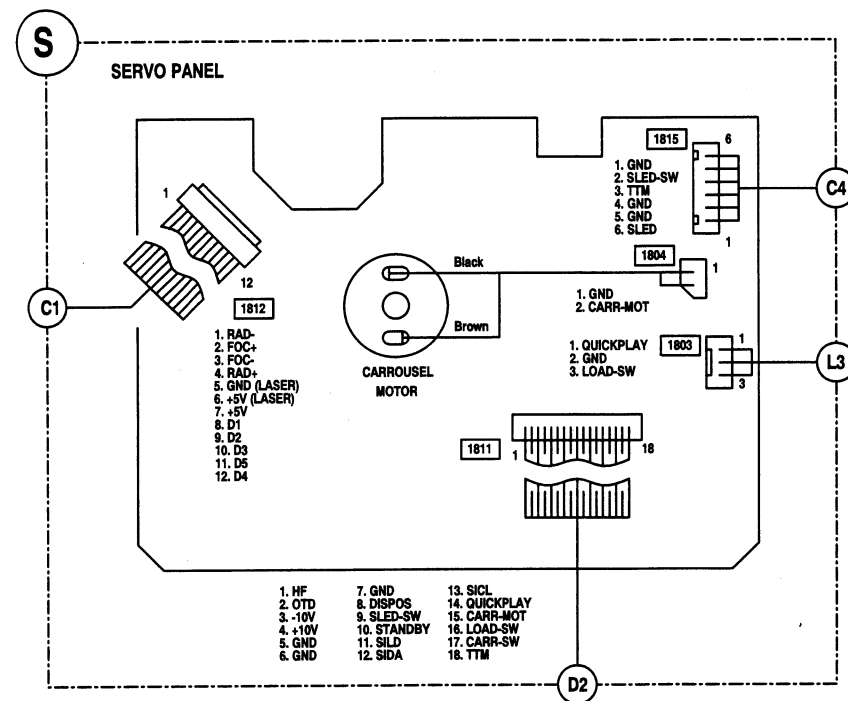
BLOCK DIAGRAMM - CD PART



BLOCK DIAGRAM - CD PART



WIRING DIAGRAM - CD PART



HAS1101
9313

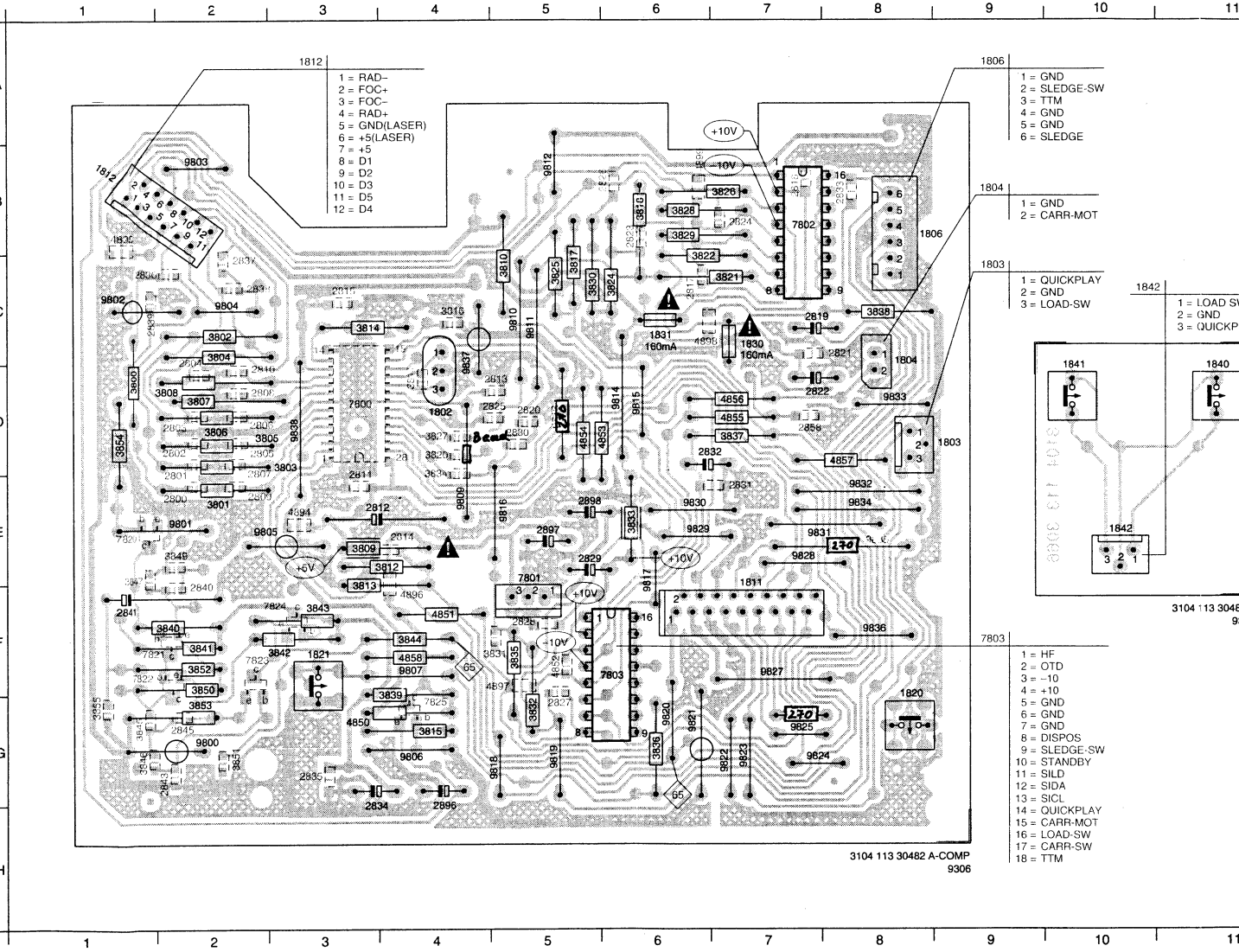
ABBREVIATIONS

A0-A12	: Address outputs to external RAM
AM*	: Additional mute
CFB	: Data slicer feedback output to capacitor
CL	: Microprocessor interface clock input
CLO	: Clock output
D0-D7	: Data inputs/outputs to external RAM
D1-D4	: Central diode signal input
DA	: Microprocessor interface data input/output line
DE1L	: Pin 1 for external de-emphasis capacitor and resistor
DE1R	: Pin 1 for external de-emphasis capacitor and resistor
DE2L	: Pin 2 for external de-emphasis capacitor and resistor
DE2R	: Pin 2 for external de-emphasis capacitor and resistor
DEEM	: Output for external de-emphasis switches
DOBM	: Digital audio output
FO	: Focus actuator output
HFD	: High frequency detector
HFI*	: Inverting data slicer input
HFI	: Non-inverting data slicer input
HM	: Motor control signal
IREF	: Current reference output
KO*	: Kill out
KTC	: Kill time capacitor connection
LDON	: Laser drive on
MACC	: Motor accelerate signal
MBRA	: Motor brake signal
MHAL	: Hall effect detector for motor
NRST	: Reset input
OC	: VCO control
OTD	: Off track detector
OUTL	: Left channel output
OUTR	: Right channel output
PD	: Phase detector
PWMA	: Pulse width modulated motor control acceleration
PWMB	: Pulse width modulated motor brake signal
R/A	: Request/acknowledge
SD1-5	: Photodiode signals
SICL	: Serial interface clock
SIDA	: Serial interface data
SILD	: Serial interface load
SL	: Sledge output
ST*	: Standby mode
TS1-TS2	: Test input
VddA	: Power supply analog part
VddD	: Power supply digital part
VRH	: Reference input for A/D converter
VRL	: Reference input for A/D converter
VssA	: Ground analog part
VssD	: Ground digital part
WE	: Write enable
XIN	: Crystal oscillator input
XOUT	: Output to clock crystal
XTLI	: Oscillator input
XTLO	: Oscillator output
XTLR	: Oscillator reference

* log. 0-active !

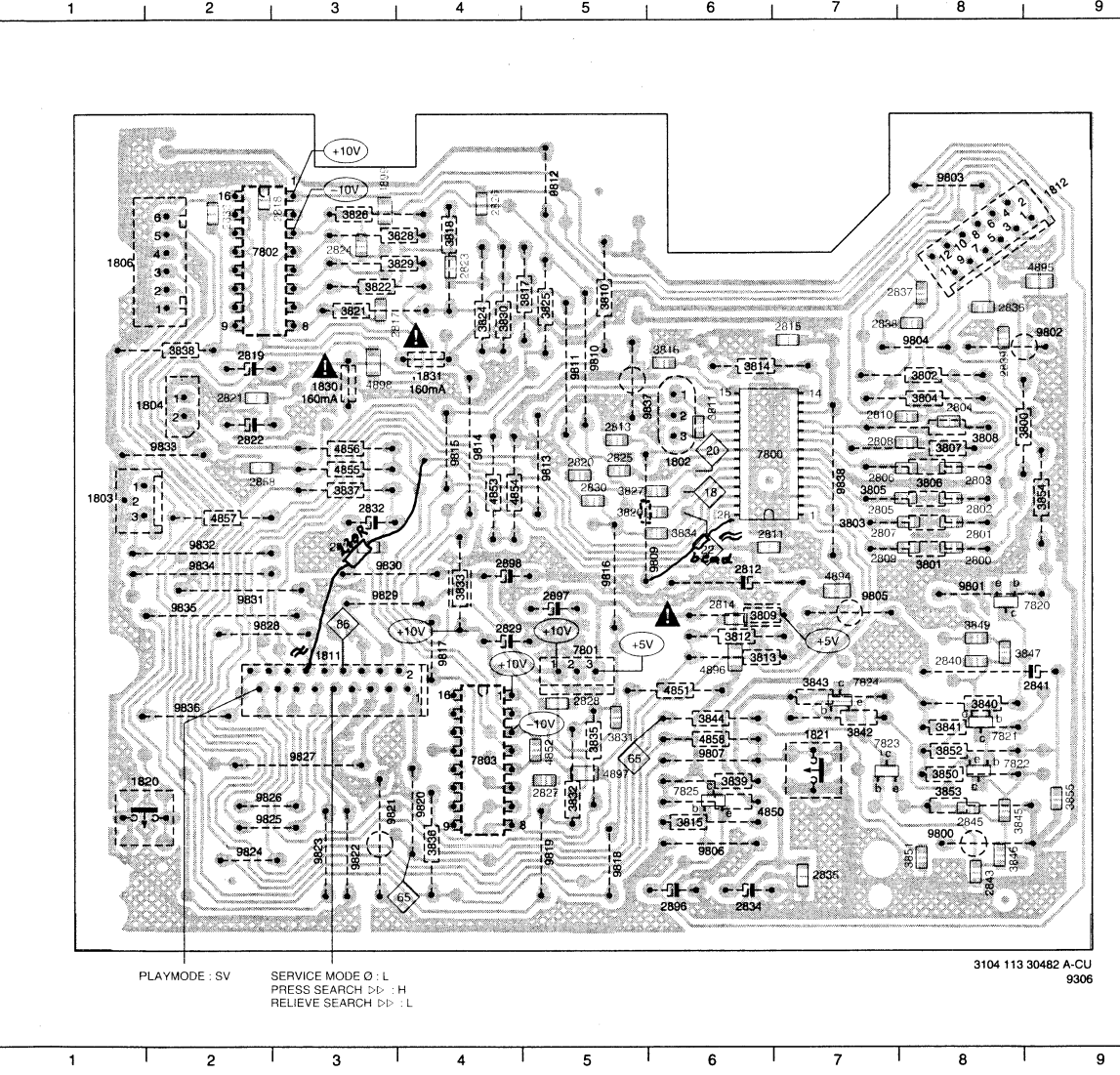
SERVO PANEL COMPONENT SIDE
LOAD PANEL

1802	D4	1841	D10	2809	E2	2821	C8	2832	D6	2845	G2	3806	D2	3817	C5	3830	C5	3841	F2	3853	G2	4858	F4	7820	E1	9805	E2	9817	F6	9829	E7
1803	D9	1842	E10	2810	D2	2822	D7	2833	B8	2858	D7	3807	D2	3818	B6	3831	F4	3842	F2	3854	D1	4894	E3	7821	F1	9806	G4	9818	G5	9829	E6
1804	D8	2800	E2	2811	E3	2823	B6	2834	H3	2896	H4	3808	D1	3820	D4	3832	G5	3843	F3	3855	G1	4895	B1	7822	F1	9807	F4	9819	G5	9830	E6
1806	B8	2801	E2	2812	E3	2824	B7	2835	G3	2897	E5	3809	E3	3821	C7	3833	E6	3844	F4	4850	G3	4896	F4	7823	F2	9809	E4	9820	G6	9831	E7
1811	F7	2802	D2	2813	D4	2825	D4	2836	C1	2898	E5	3810	C5	3822	C6	3834	F4	3845	G1	4851	F4	4897	F4	7824	F2	9810	C5	9821	G6	9832	E8
1812	B1	2803	D2	2814	E4	2826	B6	2837	C2	3800	D1	3811	D4	3824	C6	3835	F5	3846	G1	4852	F5	4898	C6	7825	G4	9811	C5	9822	G7	9833	D8
1820	G8	2804	D2	2815	C3	2827	G5	2838	C2	3801	E2	3812	E3	3825	C5	3836	G6	3847	F1	4853	D6	4899	B6	9800	G2	9812	B5	9823	G7	9834	E8
1821	F3	2805	D2	2817	C6	2828	F5	2839	C1	3802	C2	3813	F3	3826	B7	3837	D7	3849	E2	4854	D5	7800	D3	9801	E2	9813	D5	9824	G7	9835	E8
1830	C7	2806	D2	2818	B7	2829	E5	2840	F2	3803	D3	3814	C3	3827	D4	3838	C8	3850	F2	4855	D7	7801	E5	9802	C1	9814	D6	9825	G7	9836	F8
1831	C6	2807	E2	2819	C7	2830	D5	2841	F1	3804	C2	3815	G4	3828	B6	3839	G3	3851	G2	4856	D7	7802	B7	9803	B2	9815	D6	9826	G7	9837	D4
1840	D11	2808	D2	2820	D5	2831	E7	2843	G2	3805	D2	3816	C4	3829	B6	3840	F1	3852	F2	4857	D8	7803	F5	9804	C2	9816	E5	9827	F7	9838	D3

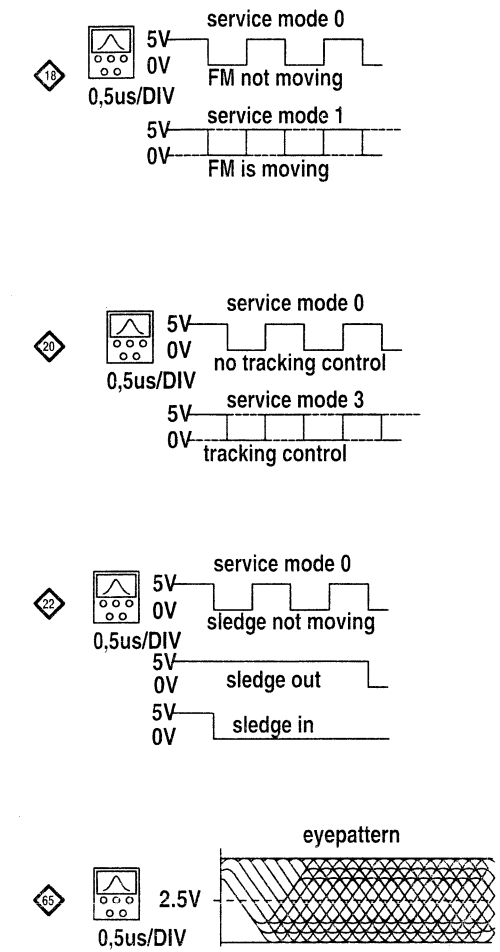


SERVO PANEL SOLDER SIDE

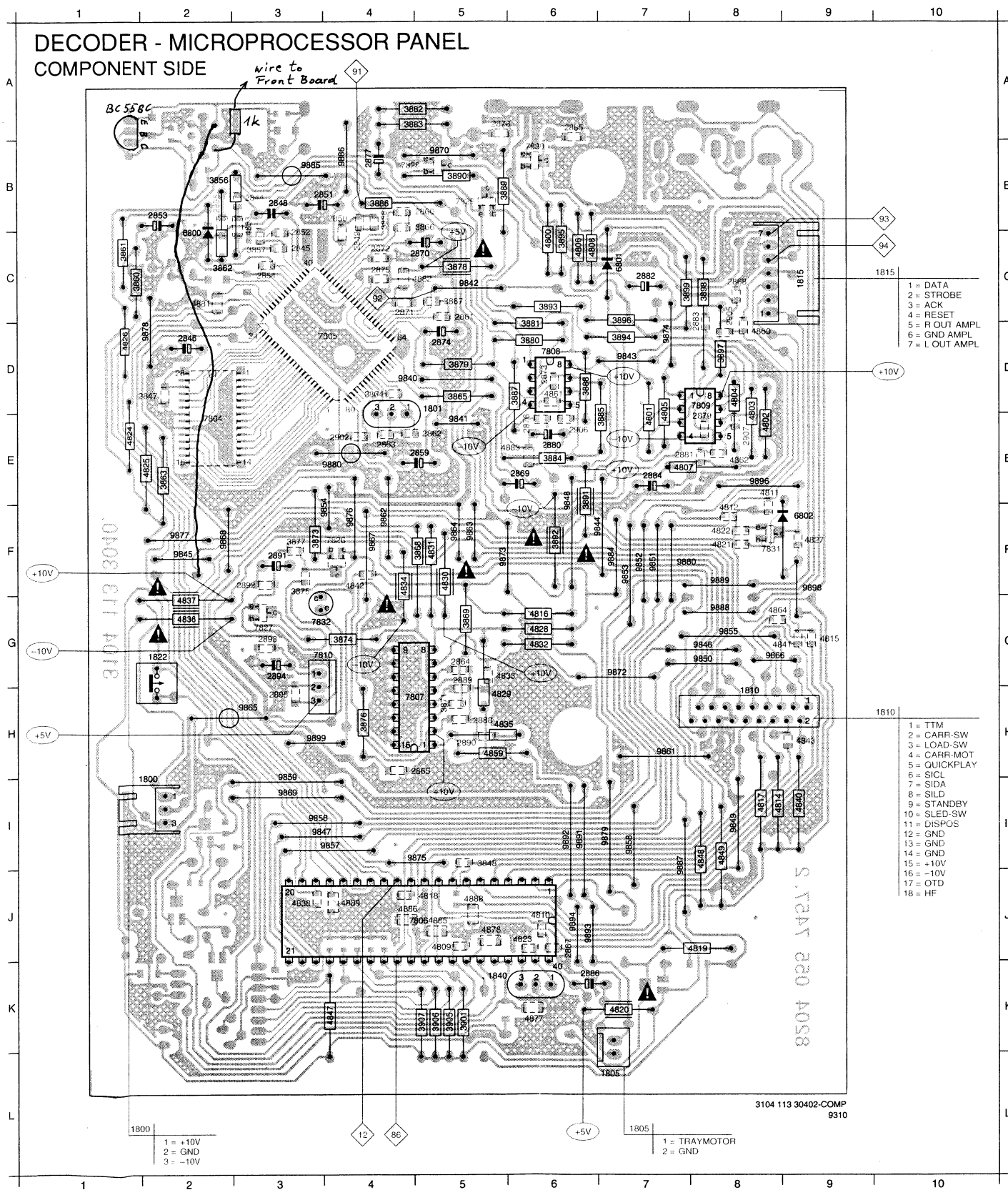
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1803	D1	2805	D7	2820	D5	2834	H6	3800	D9	3814	C6	3830	C4	3844	F6	4853	D4	7802	B2	9806	G6	9821	G3	9835	E2
1804	D1	2806	D7	2821	C2	2835	G7	3801	E8	3815	G6	3831	F5	3845	G8	4854	D4	7803	F4	9807	F6	9822	G3	9836	F2
1806	B1	2807	E7	2822	D2	2836	C8	3802	C8	3816	C6	3832	G5	3846	G8	4855	D3	7820	E8	9809	E6	9823	G3	9837	D6
1811	F3	2808	D7	2823	B4	2837	C7	3803	D7	3817	C5	3833	E4	3847	F8	4856	D3	7821	F8	9810	C5	9824	G2	9838	D7
1812	B9	2809	E7	2824	B3	2838	C7	3804	C8	3818	B4	3834	E6	3849	E8	4857	D2	7822	F8	9811	C5	9825	G2		
1820	G1	2810	D7	2825	D5	2839	C8	3805	D7	3820	D5	3835	F5	3850	F8	4858	F6	7823	F7	9812	B5	9826	G2		
1821	F7	2811	E6	2826	B4	2840	F8	3806	D8	3821	C3	3836	G4	3851	G8	4894	E7	7824	F7	9813	D5	9827	F3		
1830	C3	2812	E6	2827	G5	2841	F8	3807	D8	3822	C3	3837	D3	3852	F8	4895	B9	7825	G6	9814	D4	9828	E2		
1831	C4	2813	D5	2828	F5	2843	G8	3808	D8	3824	C4	3838	C2	3853	G8	4896	F6	9800	G8	9815	D4	9829	E3		
2800	E8	2814	E6	2829	E4	2845	G8	3809	E6	3825	C5	3839	G6	3854	D9	4897	F5	9801	E8	9816	E5	9830	E3		
2801	E8	2815	C7	2830	D5	2858	D2	3810	C5	3826	B3	3840	F8	3855	G9	4898	C3	9802	C9	9817	F4	9831	E2		
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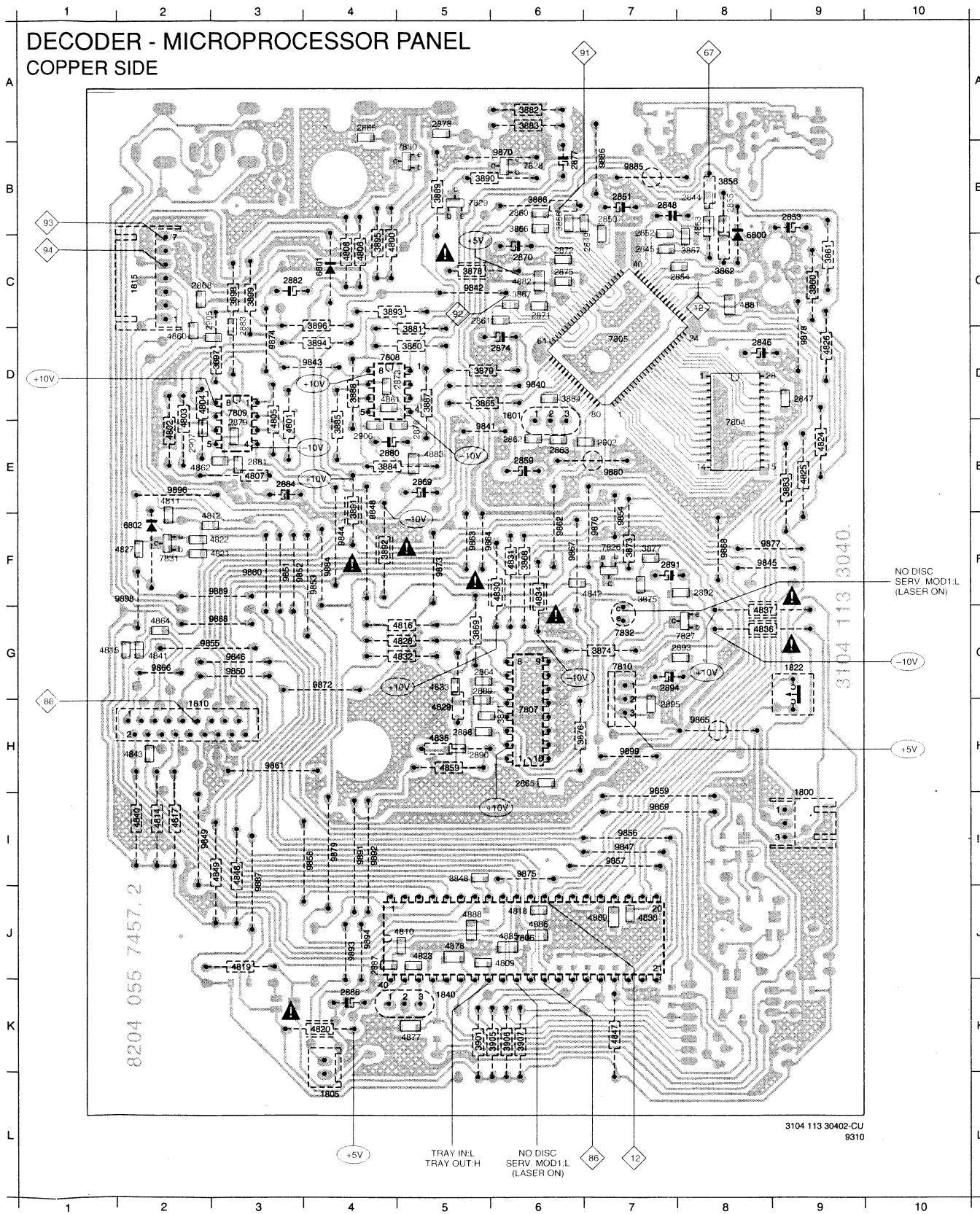
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1806 J15	1811 K 9	1812 G 1	1812 G15	2803 H 4	2809 F 5	2815 E 6	2821 E13	2827 H13	2833 J15	2839 E 3	2897 J 5	3804 G 3	3810 E 6	3816 I 9	3823 H14	3829 G13	3836 J12	3842 B 5	3849 C 3	3855 D 4	7803-A114	7825 I 4
1811 A 8	1812 H 1	1812 G1	1830 E14	2804 H 4	2810 H 5	2816 E 7	2822 D13	2828 H13	2834 B 1	2840 C13	2898 I 6	3805 G 4	3811 D 9	3817 E12	3824 E15	3830 G15	3837 J14	3843 B 6	3850 C 4	4850 J 4	7820 C 2	
1811 K 8	1812 H 1	1812 F 1	1831 C14	2805 G 5	2811 C 9	2817 B13	2823 F15	2829 J13	2835 E 2	2841 D 5	3800 F 3	3806 G 4	3812 C10	3818 E12	3825 F13	3831 H12	3838 J15	3844 B 8	3851 C 8	7800 E11	7821 C 4	
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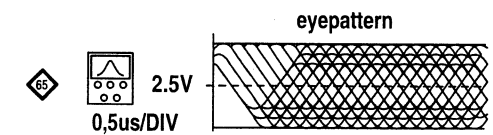
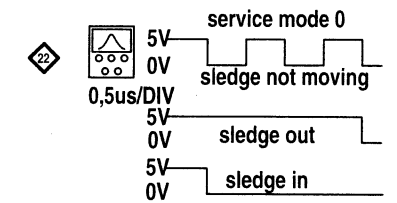
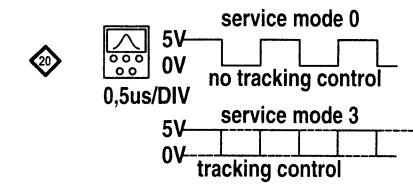
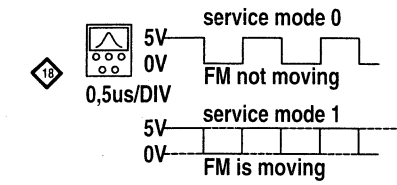
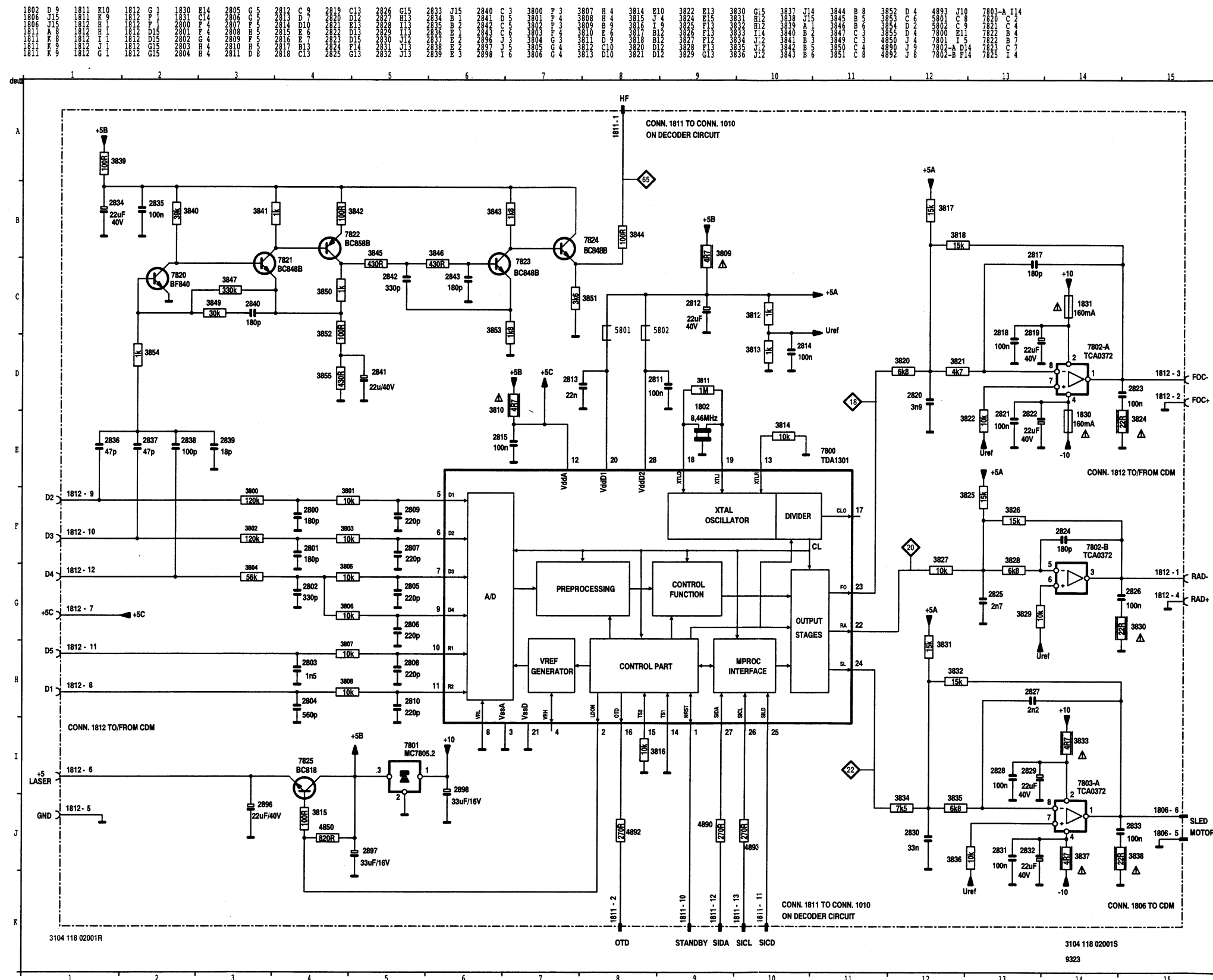
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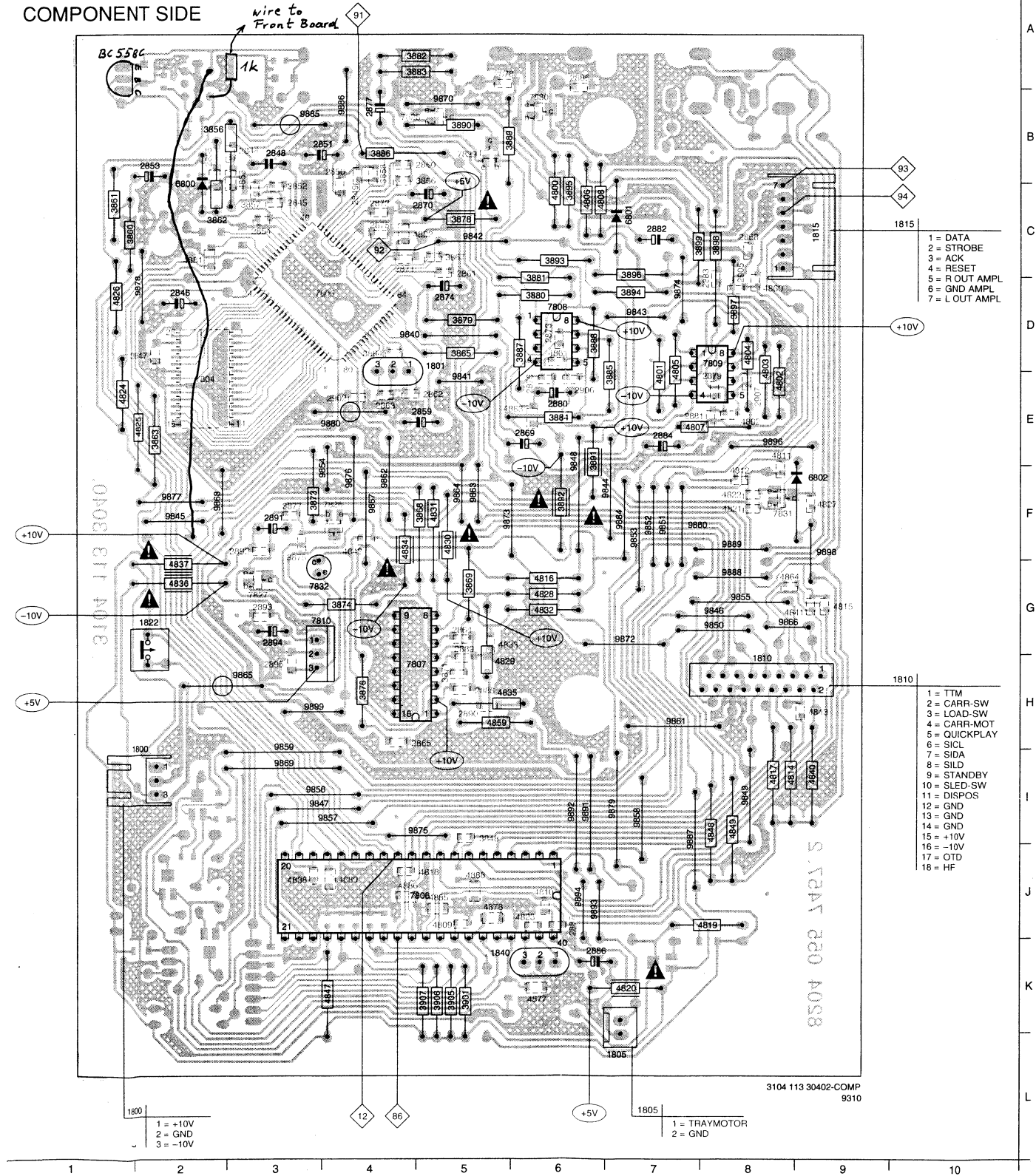


SERVO CIRCUIT DIAGRAM



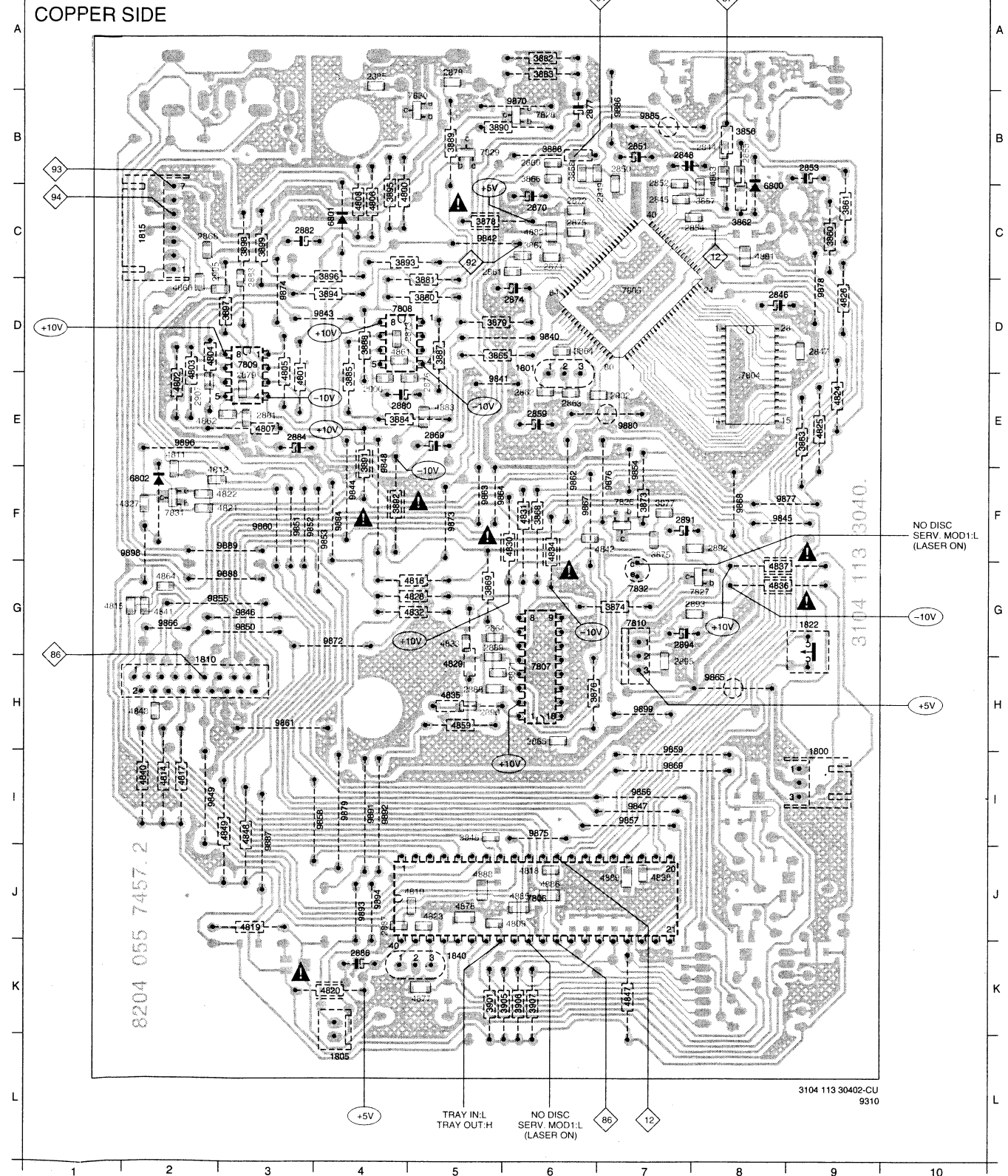
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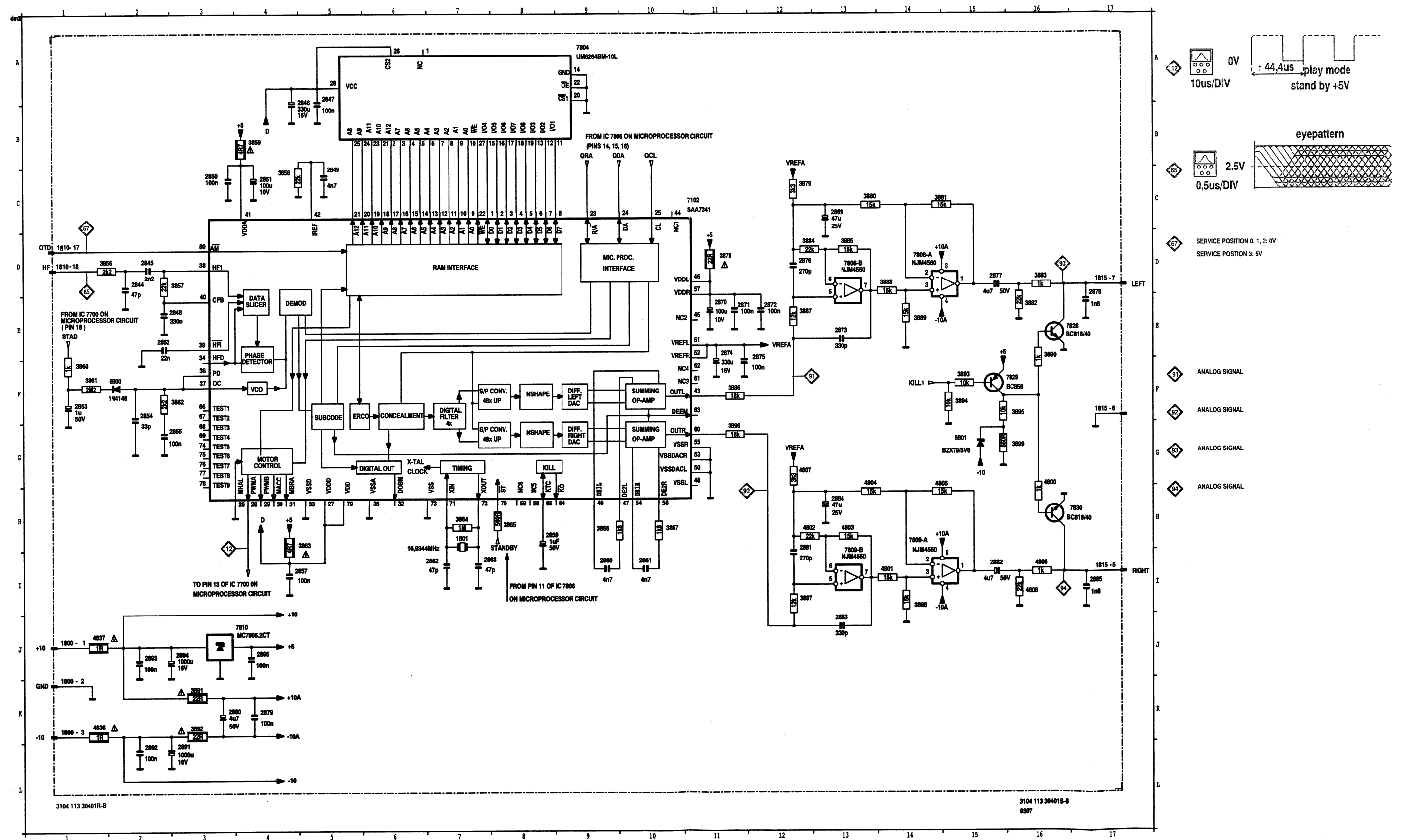
DECODER - MICROPROCESSOR PANEL COMPONENT SIDE



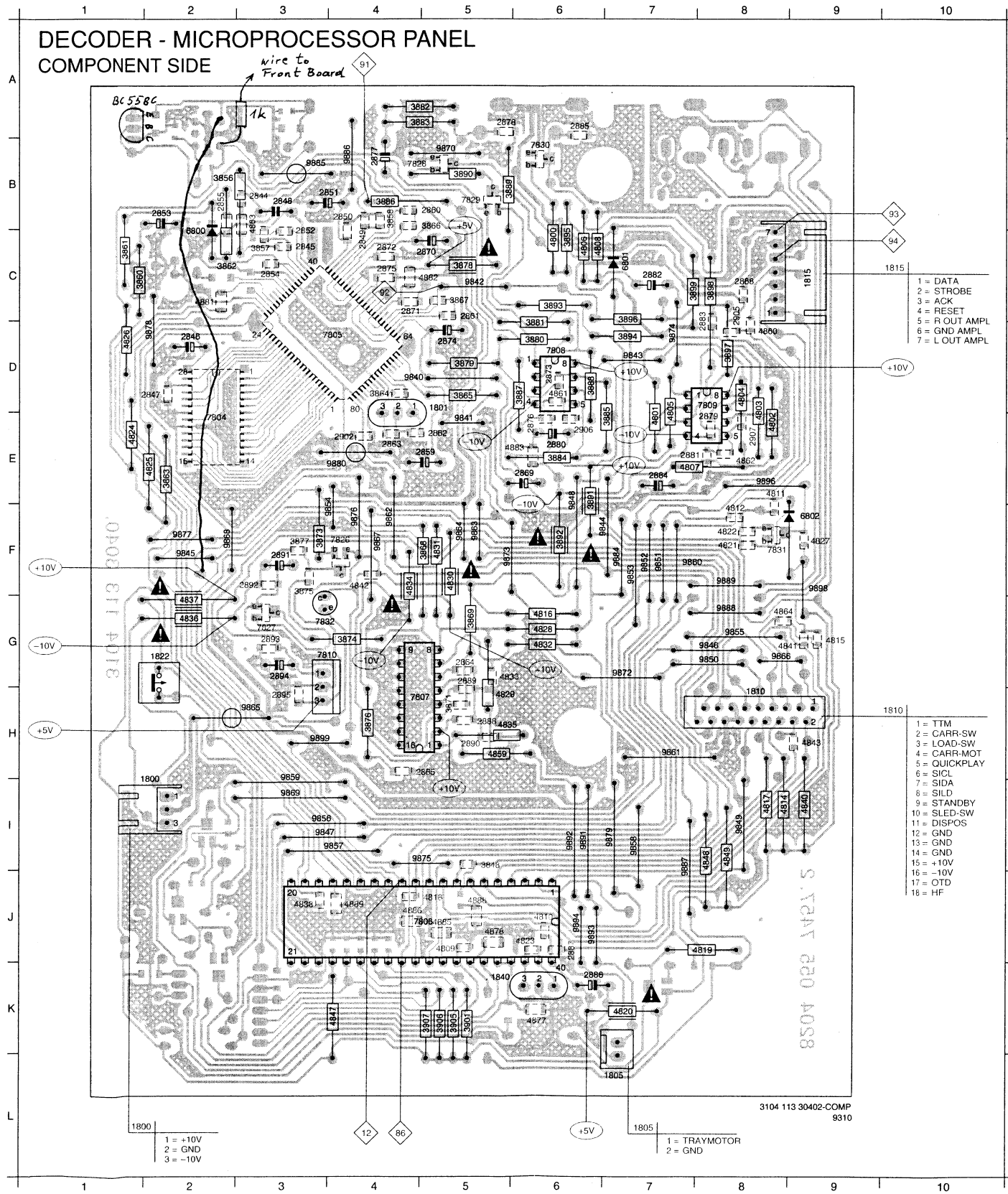
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DECODER - MICROPROCESSOR PANEL COPPER SIDE

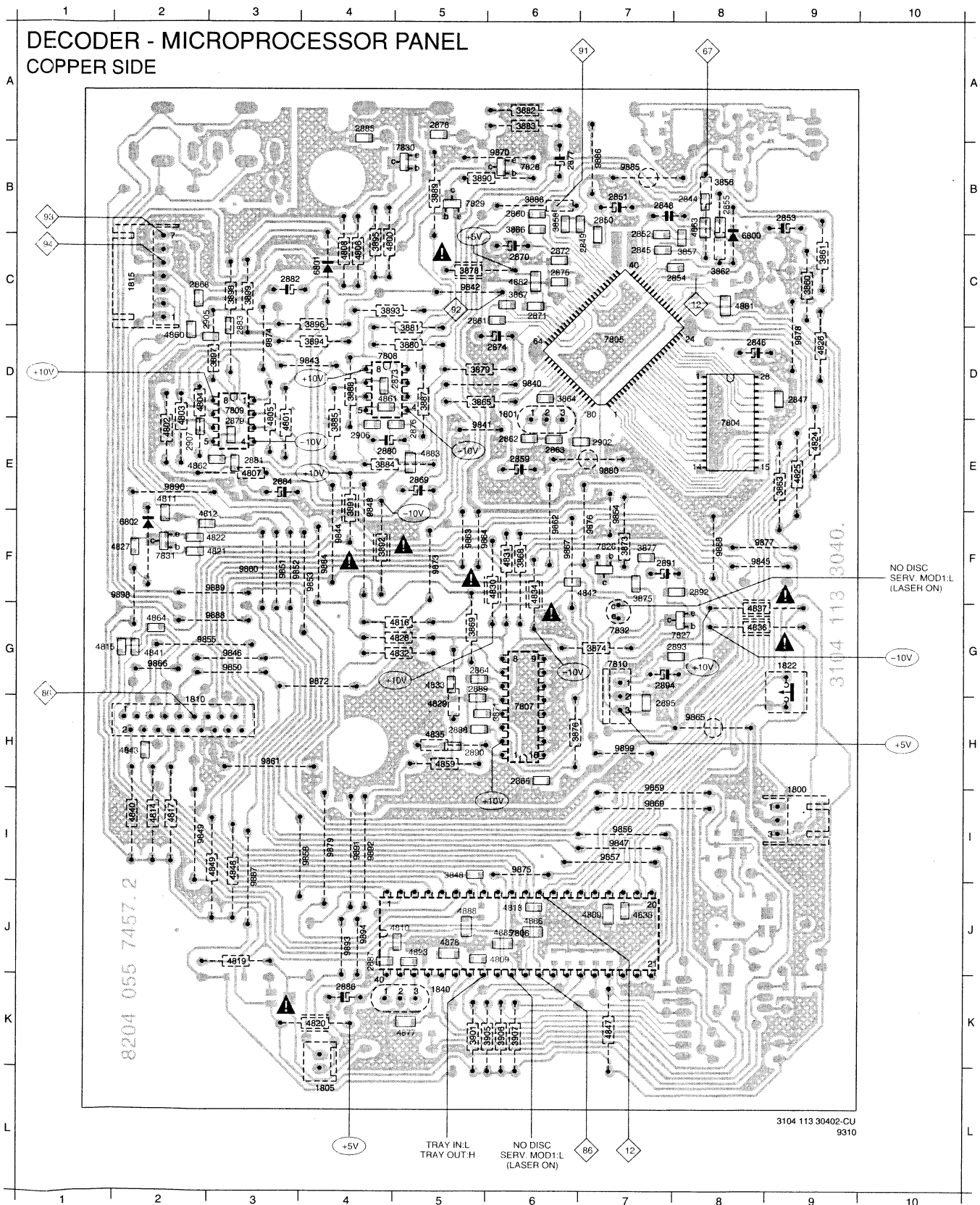


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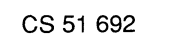
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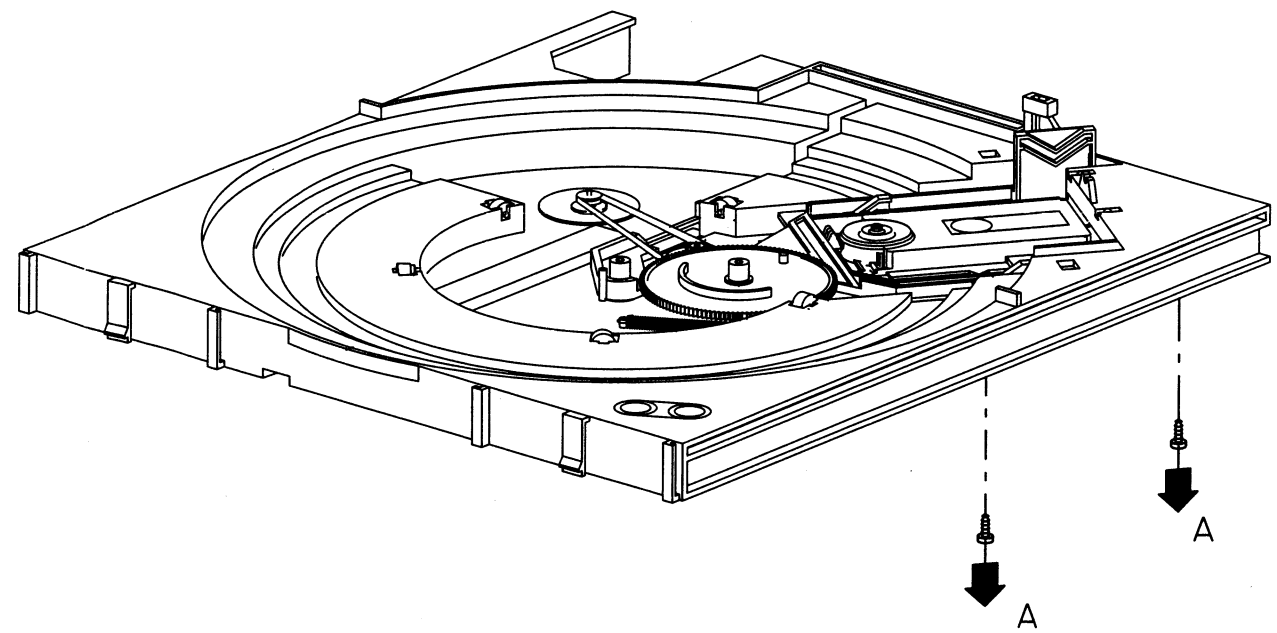
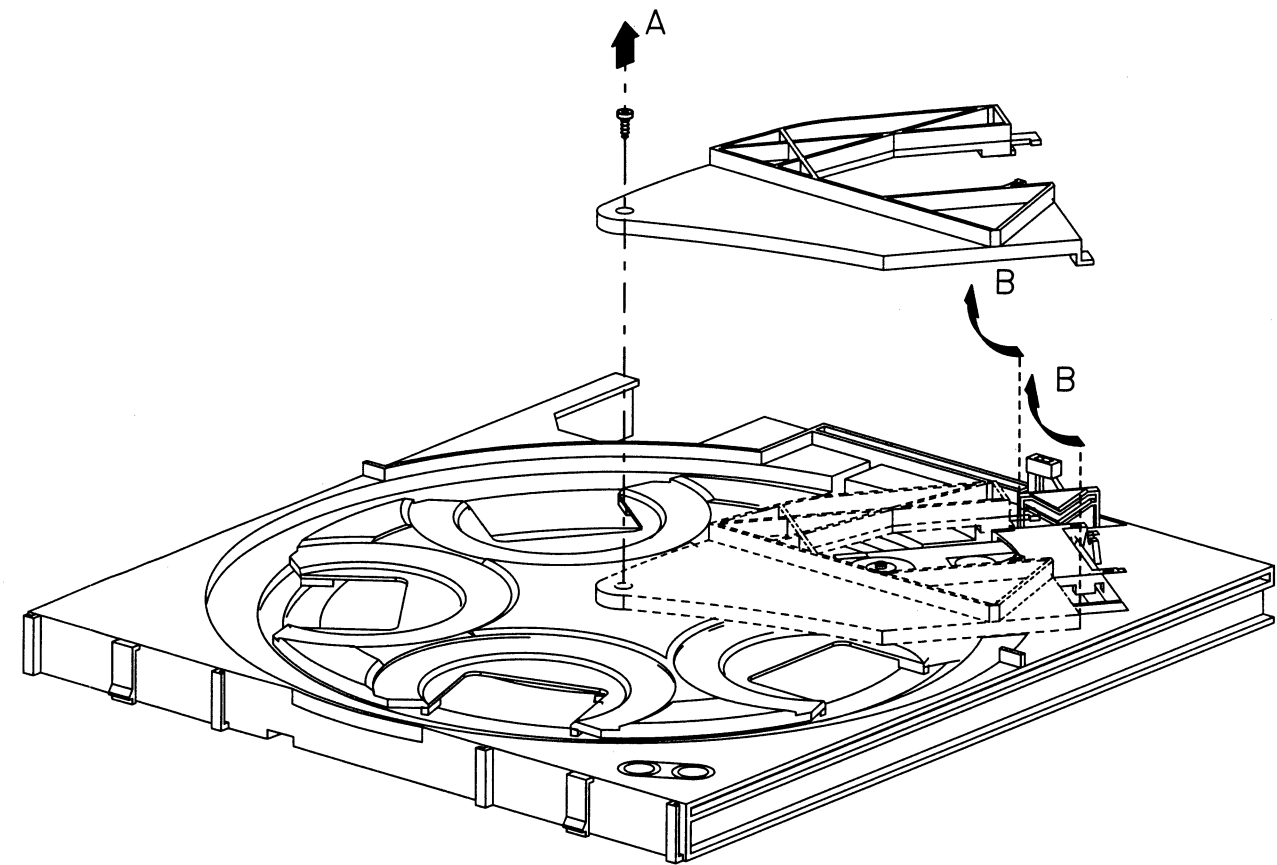
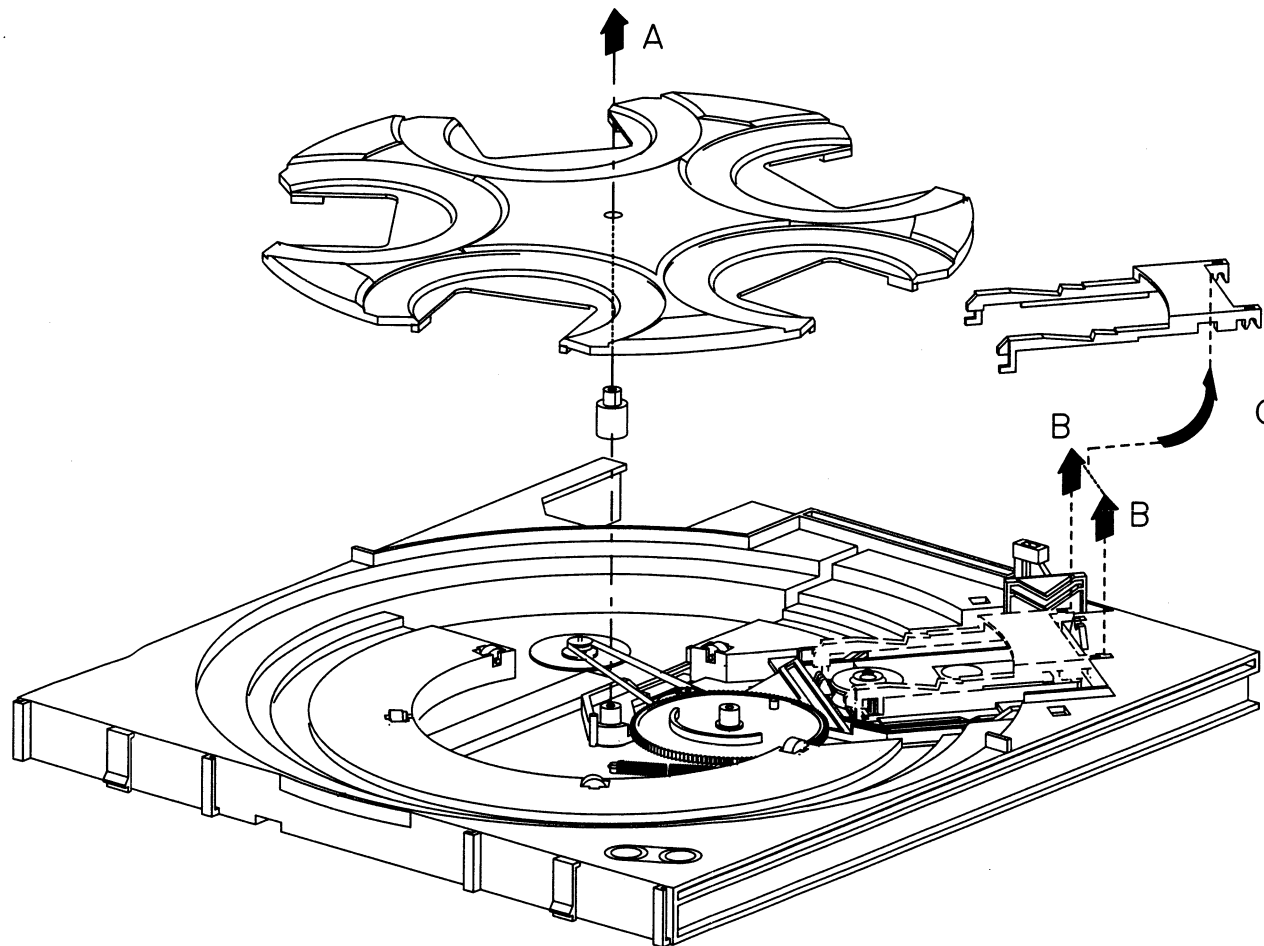
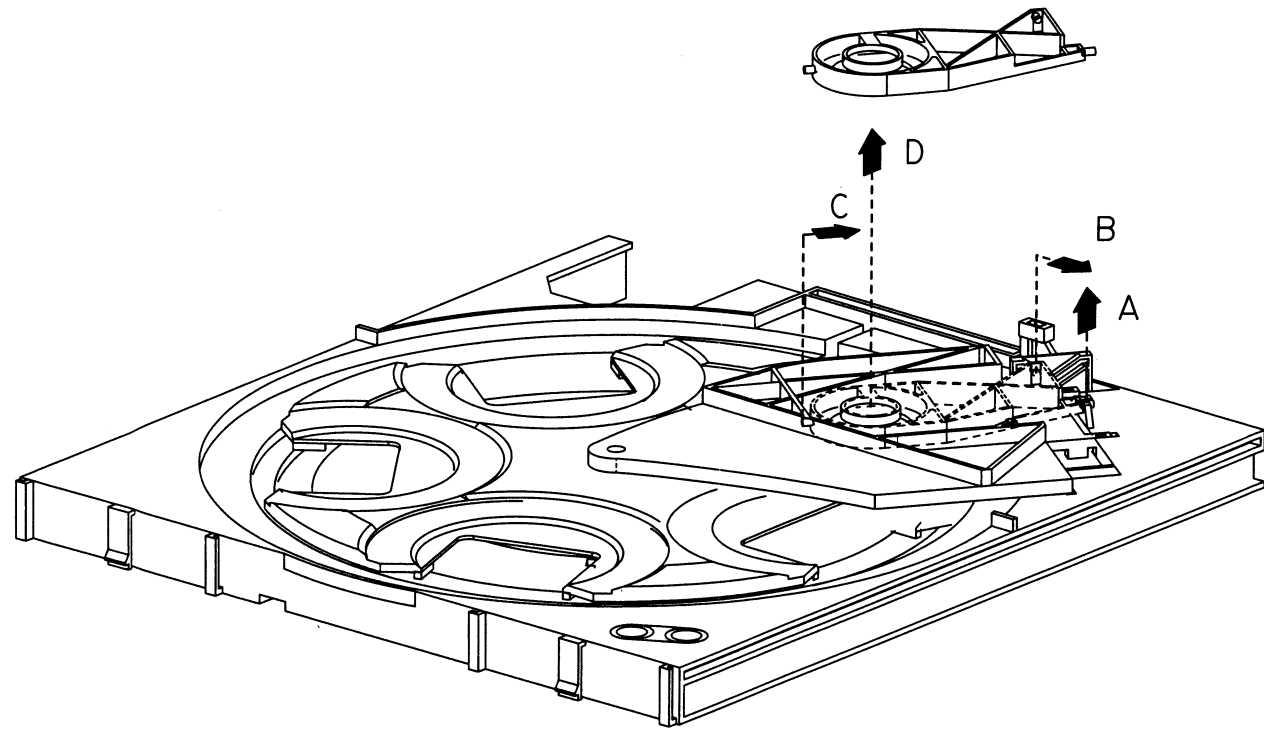
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1805	L4	2859	E6	2879	A5	2895	H7	3868	F6	3887	D5	4800	C4	4818	J6	4835	H5	4877	K5	7809	D3	9848	F4	9865	H8	9886	B7
1810	H2	2860	B6	2879	E3	2902	E7	3869	G5	3888	D4	4801	E3	4819	J3	4836	G8	4878	J5	7810	G7	9849	I2	9866	G2	9887	J3
1815	C2	2861	C5	2880	E4	2905	D3	3871	H6	3889	B5	4802	E2	4820	K4	4837	G8	4881	C8	7826	F7	9850	G3	9867	F6	9888	G2
1822	G8	2862	E6	2881	E3	2906	E4	3873	F7	3890	B5	4803	E2	4821	F2	4838	J7	4882	C8	7827	G7	9851	F3	9868	F8	9889	F2
1840	K5	2863	E6	2882	C3	2907	E2	3874	G7	3891	F4	4804	D2	4822	F2	4840	I2	4883	E5	7828	B6	9852	F3	9869	I7	9891	I4
2844	B8	2864	G5	2883	D3	2908	I5	3875	F7	3892	F4	4805	D2	4823	J5	4841	G2	4884	J6	7829	B5	9853	F4	9870	B6	9892	I4
2845	C7	2865	H6	2884	E3	2909	B2	3876	H6	3893	C4	4806	C4	4824	E9	4842	F6	4885	J6	7830	B5	9854	F7	9872	G4	9893	J4
2846	D8	2868	C2	2885	A4	2907	C8	3877	F7	3894	D4	4807	E3	4825	E9	4843	H2	4886	J5	7831	F2	9855	G2	9873	F5	9894	J4
2847	D9	2869	E5	2886	K4	2908	C5	3878	C5	3895	C4	4808	C4	4826	D9	4847	K7	4889	J7	7832	G7	9856	I7	9874	D3	9896	E2
2848	C7	2870	C6	2887	J4	2909	D5	3879	D5	3896	D4	4809	J6	4827	F1	4848	I3	4890	C8	9840	D6	9857	I7	9875	I6	9898	F1
2849	C7	2871	C6	2888	H5	2907	C9	3880	D5	3897	D3	4810	J4	4828	G4	4849	I3	4891	C4	9841	E5	9858	I4	9876	F7	9899	H7
2850	B7	2872	C6	2889	G5	2908	C8	3881	D5	3898	C3	4811	E2	4829	H5	4850	H5	4892	F2	9842	C5	9859	I7	9877	F8		
2851	B7	2873	D5	2890	H5	2909	H5	3883	E9	3899	C3	4812	F2	4830	F6	4860	D2	7804	E8	9843	D3	9860	F3	9878	D9		
2852	C7	2874	D6	2891	F7	2910	D6	3884	D6	3901	K5	4814	I2	4831	F6	4861	D4	7805	D7	9844	F4	9861	H3	9879	I4		
2853	H9	2875	C6	2892	F8	2911	D6	3885	D5	3905	K6	4815	G1	4832	G4	4862	E2	7806	J6	9845	F8	9862	F6	9880	E7		



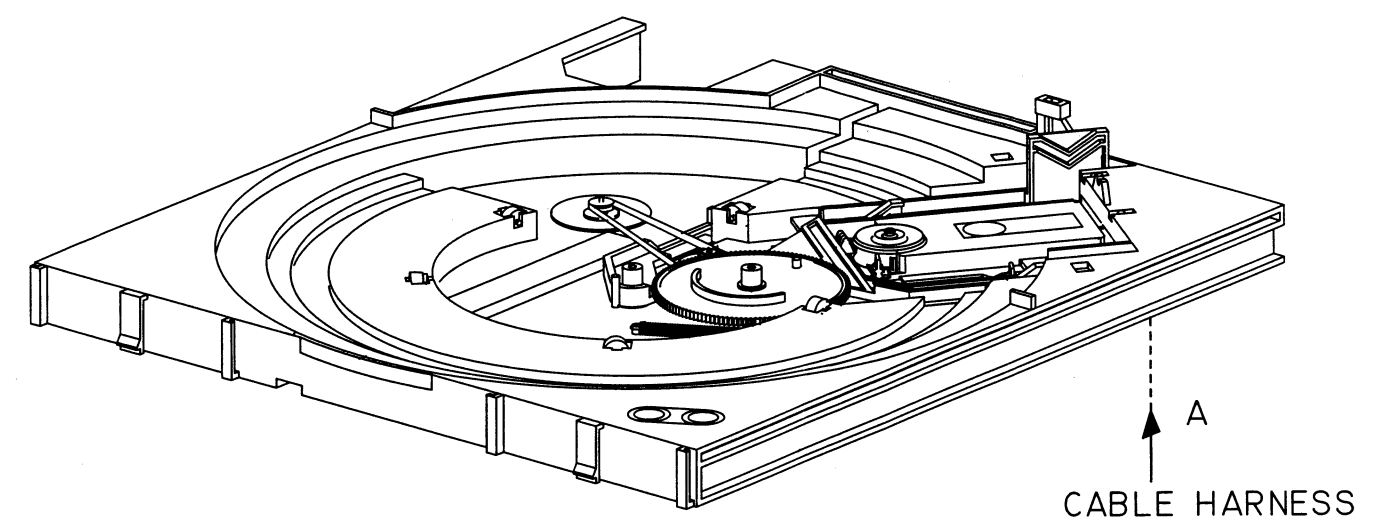
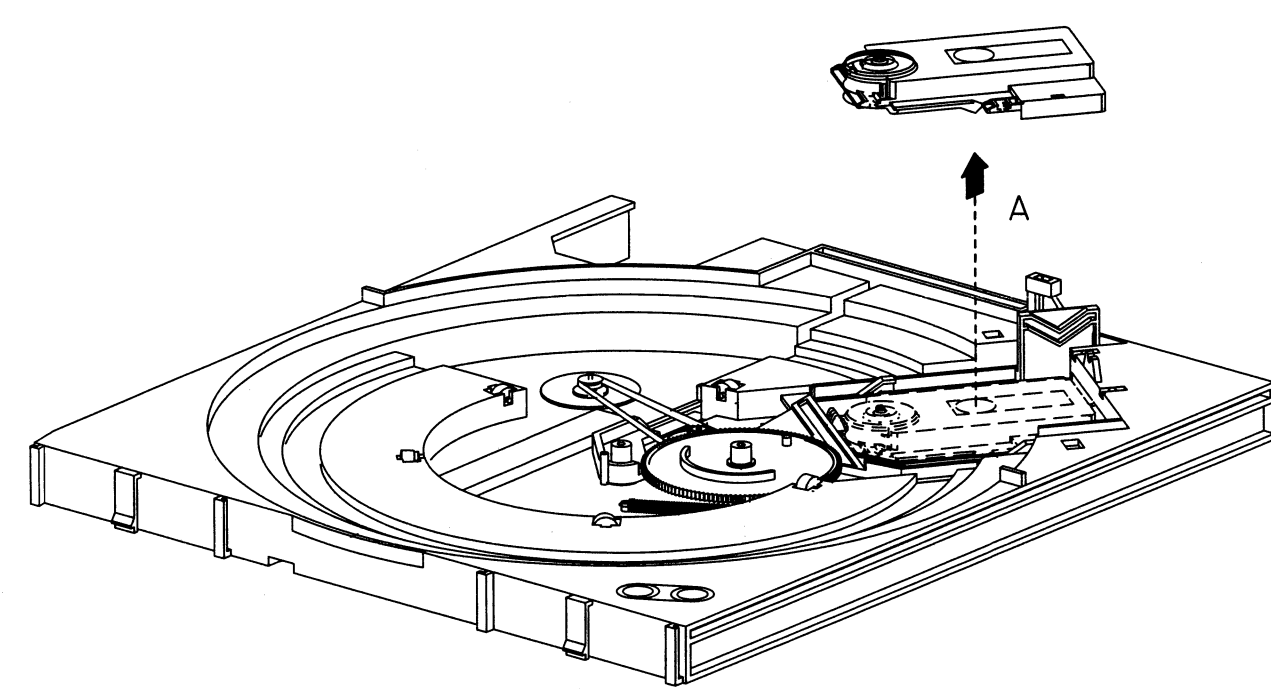
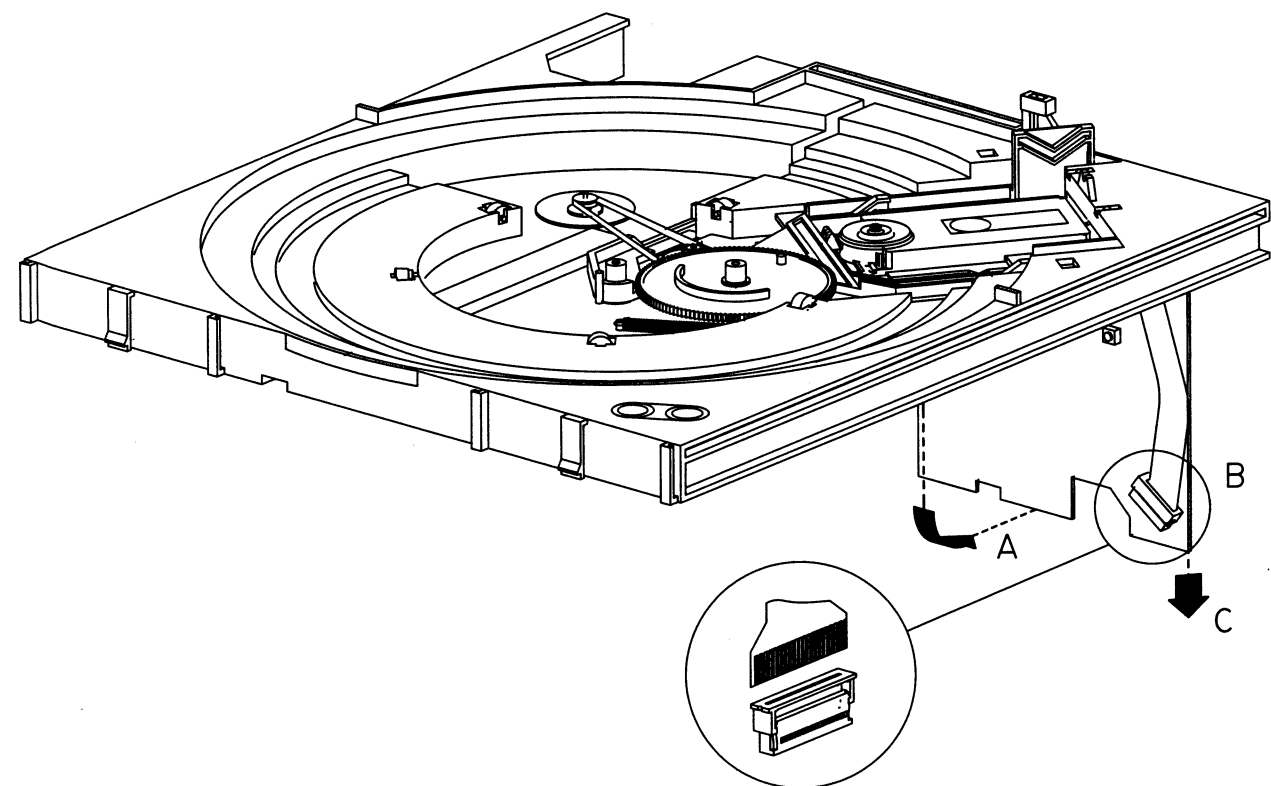
1803	E18	1805	H14	1810	D14	1810	F14	1810	A14	1811	E15	1811	G15	1811	B15	1815	F 2	1840	M 7	1842	E20	2887	B 8	2892	J 3	3848	D 4	3874	B12	3905	D 6	4811	D 4	4817	B 3	4822	L 5	4830	G11	4835	H12	4841	D16	4852	C17	4857	D16	4877	K 6	7807-A	G11	7831	L 5
1800	F 2	1803	D18	1806	E18	1810	F14	1810	C14	1811	F15	1811	F15	1811	F15	1815	F16	1840	E20	1842	D18	2888	G12	2891	J 4	3849	C12	3875	B14	3906	D 6	4812	D 4	4818	C10	4823	L 5	4831	H10	4836	J10	4842	G 6	4853	D16	4858	H15	4878	H 6	7807-B	B13	7832	L 5
1800	J 2	1804	D18	1806	F18	1810	F14	1810	D14	1811	C12	1811	C12	1811	F15	1815	F16	1840	E20	1842	E18	2889	H12	2890	J 4	3850	C12	3876	B14	3907	D 6	4813	D 4	4819	C10	4824	M 5	4832	H10	4837	J10	4843	D16	4854	D16	4859	C15	4879	H 6	7808-A	G11	7833	L 5
1803	E18	1805	H14	1810	G14	1810	D14	1810	B 2	1811	G15	1811	C15	1811	E15	1815	E 2	1842	E20	1842	E20	2889	J 4	2905	M 6	3851	B10	3877	D 6	3908	E10	4814	C 3	4820	L 5	4833	H11	4838	J10	4844	C11	4851	C17	4860	C 3	4880	B 9	7809-B	B13	7834	L 5		



DEMOUNTING OF CARROUSEL
DEMOUNTING OF CDM



DEMOUNTING OF CDM



Partslist Loading

89	4822 466 93131	PRESSURE PLATE
90	4822 256 91912	PRESSURE RING HOLDER
91 + 92:	4822 532 52386	PRESSURE RING
94 + 128 + 129 + 130 + 141 + 142 + 144:	4822 426 90109	FRAME ASSY
95	4822 522 33255	GEARWHEEL
96	4822 535 40105	CRANK
98	4822 691 30278	CDM12.1
99	4822 403 70598	CDM LOCKING
100	4822 466 93129	ROTARY DISC
101	4822 520 20758	BEARING
103	4822 401 11447	TRAY TUMBLER
104 - 107	4822 466 93065	BLOCK
108 + 110 + 121 + 123 + 131 + 136 + 137 + 138 + 139 + 140:	4822 444 50685	TRAY ASSY
109	4822 532 51756	GROMMET
110	4822 401 11444	BRACKET
113	4822 492 52313	TENSION SPRING
114	4822 256 91915	SUPPORT
115 + 124 + 125	4822 466 93134	SLIDE STRIP
116	4822 522 33256	CAM WHEEL
119	4822 528 50335	MOTOR
120	4822 528 50335	MOTOR
121	4822 528 50334	PULLEY
122	4822 358 10115	DRIVING BELT

127 - 128 - 129 - 131 - 141 - 142	4822 466 93132	GUIDE
132	4822 403 70599	KEY UNIT
133	4822 466 93171	COVER
136 - 140	4822 528 70646	ROLLER
144	4822 528 50334	PULLEY
145	4822 358 10115	DRIVING BELT
146 - 147	4822 402 50291	LIFT TUMBLER
148 - 150	4822 492 52123	COMPRESSION SPRING

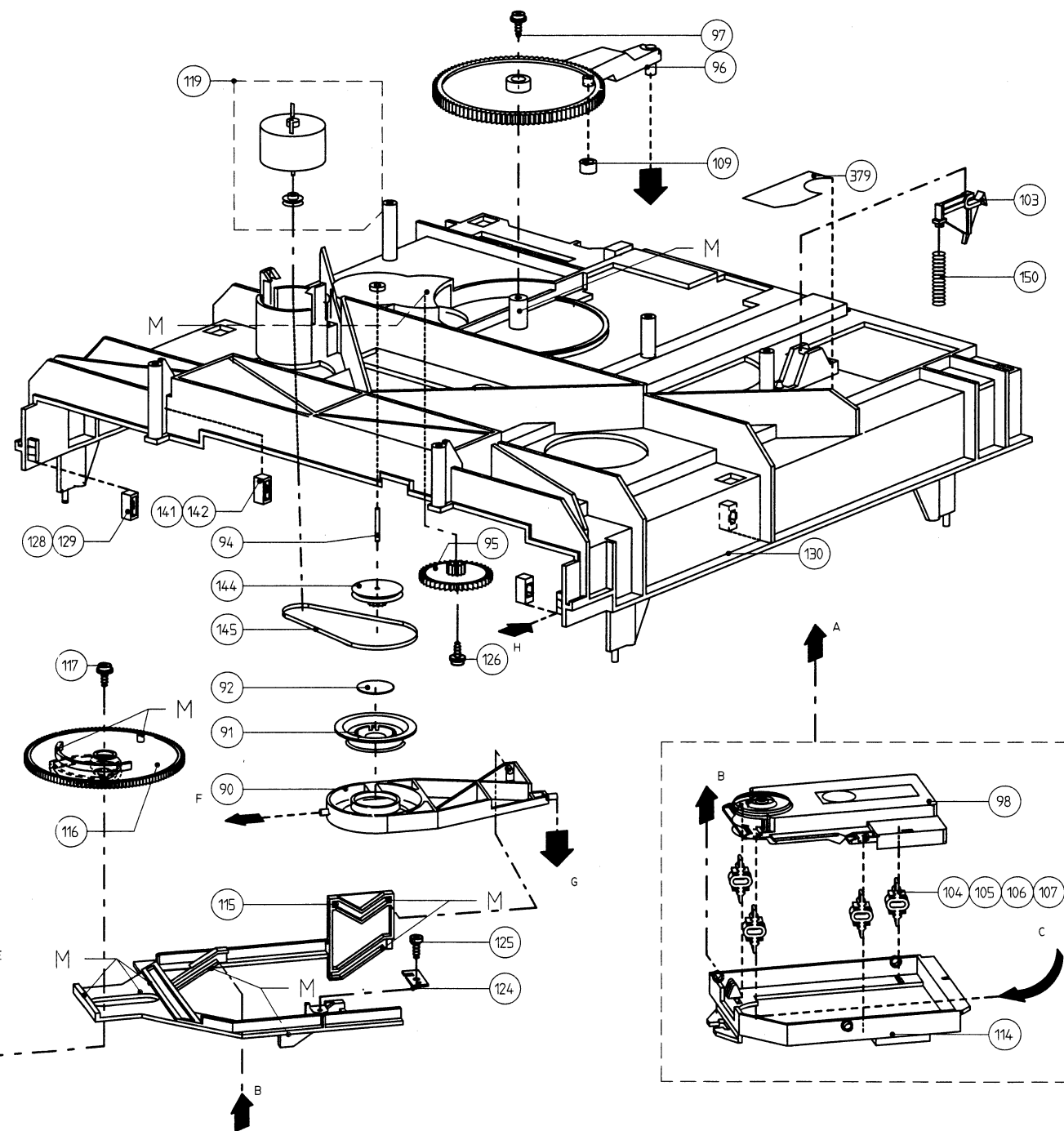
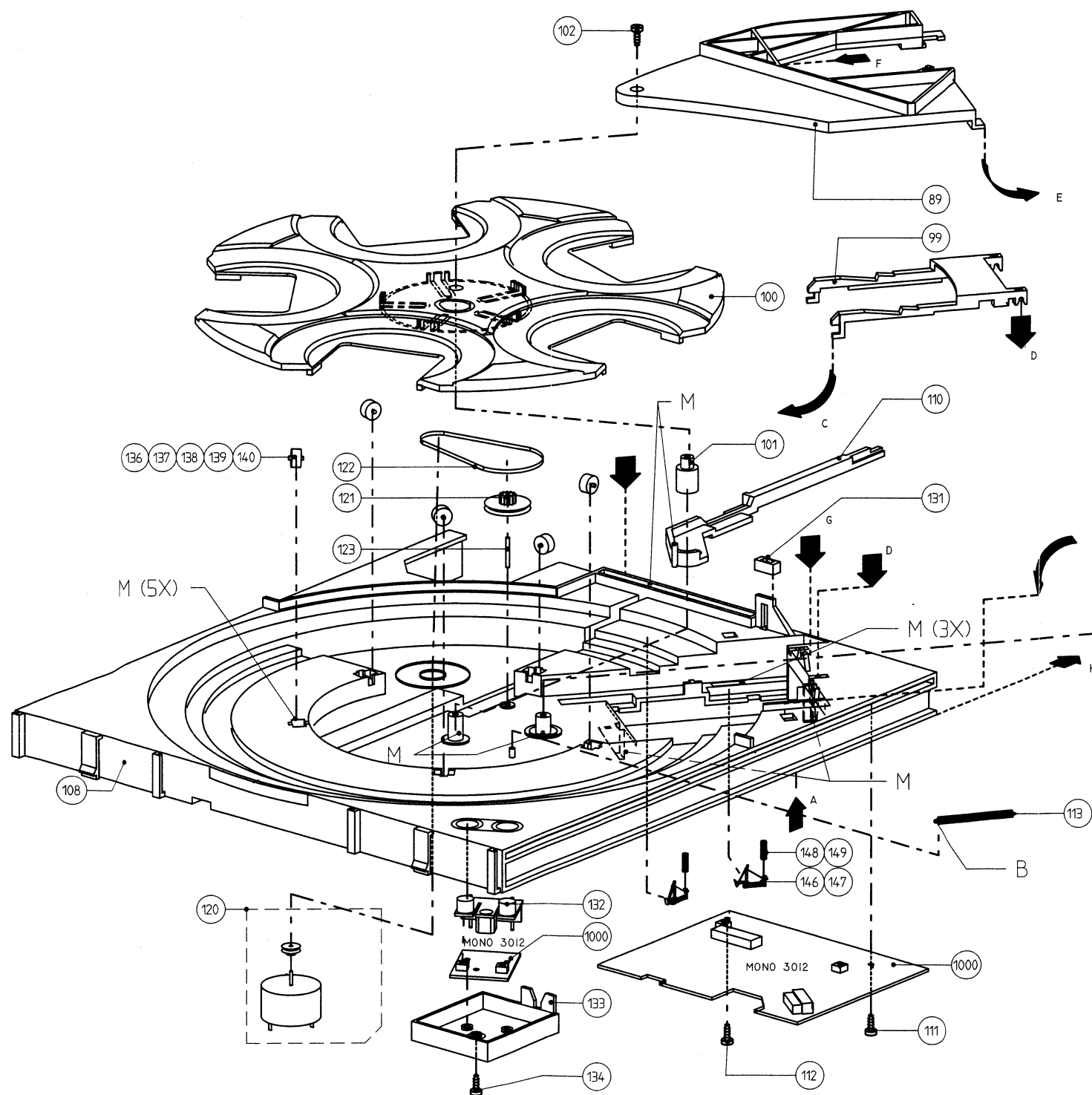
Plastite M3x10:
78, 79, 111, 112, 202, 203, 204, 259, 260
261, 262, 269, 270, 271

Plastite M3x12:
30, 31, 32, 33, 34, 37, 40, 41, 42, 43

M3x10 + washer:
97, 117, 126, 171, 172, 173, 174, 175, 176,
177, 178, 267, 268

M3x16:
102, 134

EXPLODED VIEW LOADING

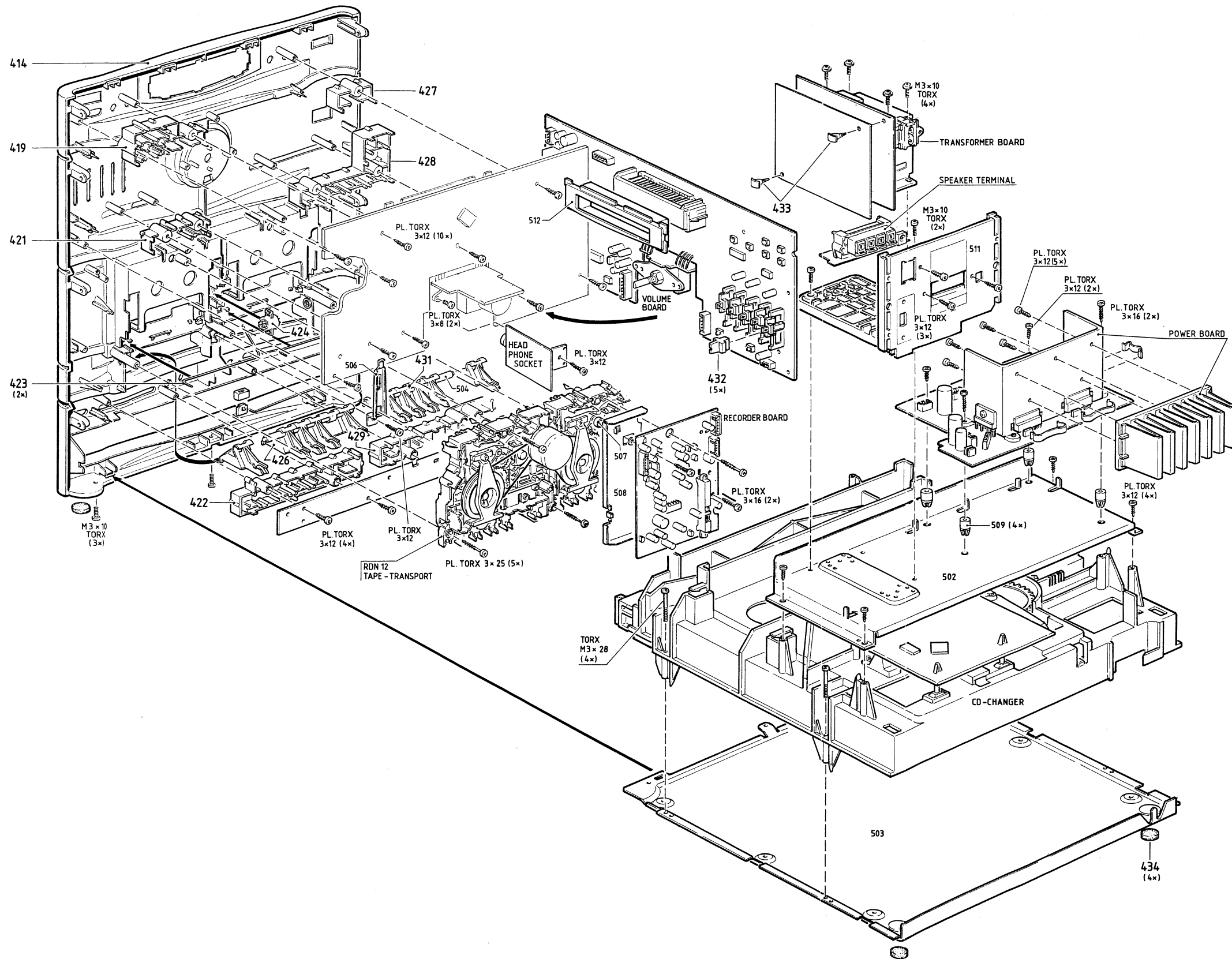


M: TO LUBRICATE WITH: 4822 390 20128 GREASE



401	4822 426 30155	SIDE LEFT
402	4822 443 63936	CASS. DOOR A-DECK
403	4822 450 62087	WINDOW A-DECK
404	4822 450 62088	WINDOW B-DECK
406	4822 443 63935	CASS. DOOR B-DECK
407	4822 492 63927	SPRING,CASS.PRESS
408	4822 443 63037	DOOR,CASSETTE
409	4822 413 41792	KNOB VOLUME
411	4822 492 51374	SPRING KNOB CLAMP
412	4822 381 11418	IR WINDOW
413	4822 450 62074	WINDOW PRINTED
414	4822 426 51657	FRONT AS640/37
414	4822 426 51667	FRONT AS642/37
414	4822 426 51668	FRONT AS641/37
414	4822 426 51656	FRONT AS640/20./20B./21./22./25
414	4822 426 51658	FRONT AS645/21
415	4822 444 40666	FRONT CD TRAY
416	4822 426 60639	COVER
417	4822 426 60641	BACKPLATE TOP
418	4822 426 30154	SIDE RIGHT
419	4822 410 62618	KNOB PRSET UP/DOWN
420	4822 426 60642	BACKPLATE BOTTOM
421	4822 410 62683	KNOB HSD, FE/CHROME
422	4822 410 62685	KNOB CD RIGHT
423	4822 492 42595	SPRING CASS. COMPART
424	4822 529 10278	DAMPER
426	4822 410 62619	BUTTON SET
427	4822 410 62623	KNOB AUTOPROGRAM
428	4822 410 62617	KNOB SELECTOR+POWER
429	4822 410 62684	KNOB CD LEFT
431	4822 410 62621	BUTTON SET
432	4822 411 61929	KNOB EQUALIZER
433	4822 466 93148	SPACER
434	4822 462 40683	FOOT RUBBER
468	4822 410 62622	KNOB MICRO-MIX

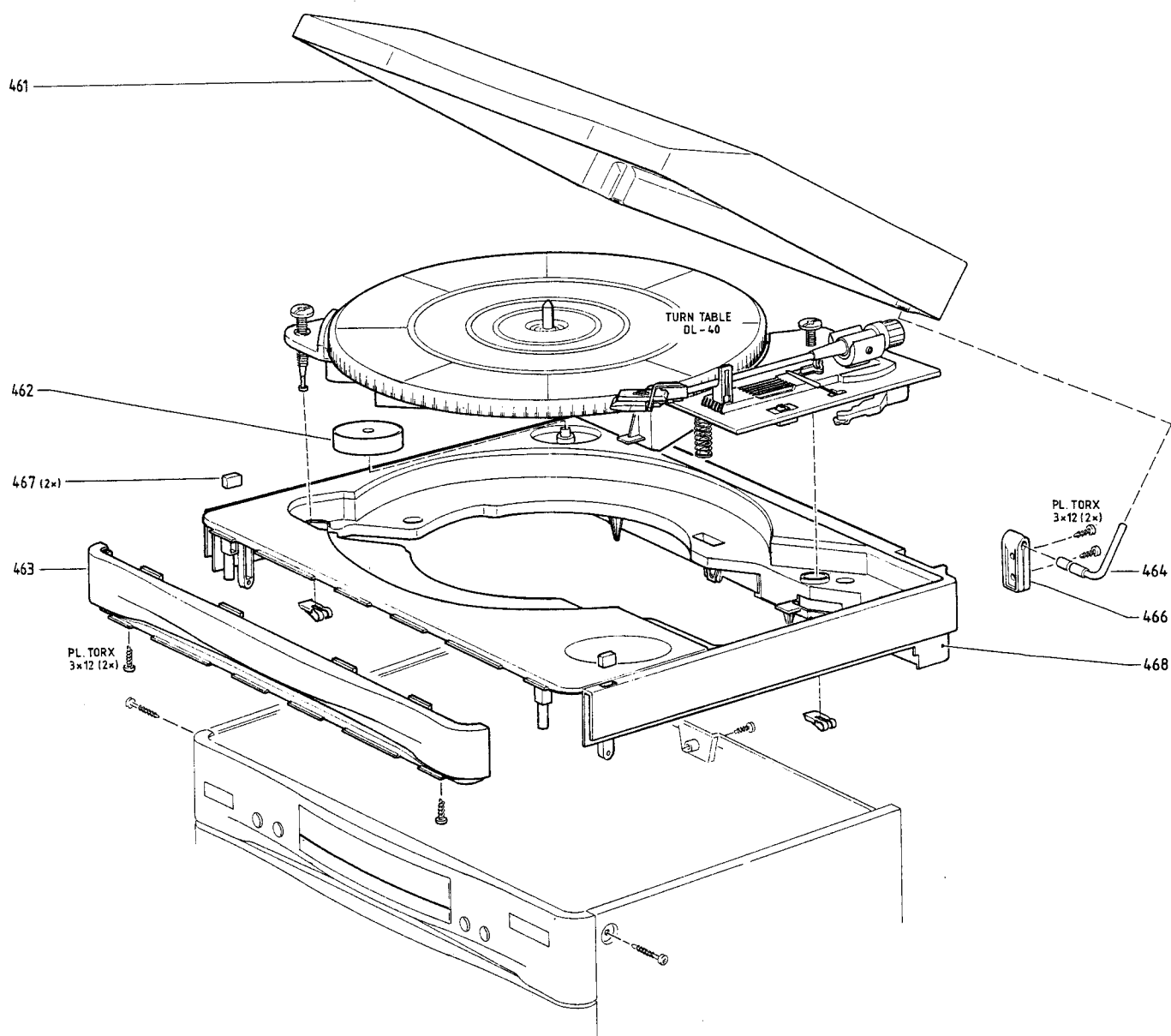
EXPLODED VIEW OF SET II



MECHANICAL PARTS

401	4822 426 30155	SIDE LEFT
402	4822 443 63936	CASS. DOOR A-DECK
403	4822 450 62087	WINDOW A-DECK
404	4822 450 62088	WINDOW B-DECK
406	4822 443 63935	CASS. DOOR B-DECK
407	4822 492 63927	SPRING,CASS.PRESS
408	4822 443 63037	DOOR,CASSETTE
409	4822 413 41792	KNOB VOLUME
411	4822 492 51374	SPRING KNOB CLAMP
412	4822 381 11418	IR WINDOW
413	4822 450 62074	WINDOW PRINTED
414	4822 426 51657	FRONT AS640/37
414	4822 426 51667	FRONT AS642/37
414	4822 426 51668	FRONT AS641/37
414	4822 426 51656	FRONT AS640/20, /20B, /21, /22, /25
414	4822 426 51658	FRONT AS645/21
415	4822 444 40666	FRONT CD TRAY
416	4822 426 60639	COVER
417	4822 426 60641	BACKPLATE TOP
418	4822 426 30154	SIDE RIGHT
419	4822 410 62618	KNOB PRSET UP/DOWN
420	4822 426 60642	BACKPLATE BOTTOM
421	4822 410 62683	KNOB HSD, FE/CHROME
422	4822 410 62685	KNOB CD RIGHT
423	4822 492 42595	SPRING CASS. COMPART
424	4822 529 10278	DAMPER
426	4822 410 62619	BUTTON SET
427	4822 410 62623	KNOB AUTOPROGRAM
428	4822 410 62617	KNOB SELECTOR+POWER
429	4822 410 62684	KNOB CD LEFT
431	4822 410 62621	BUTTON SET
432	4822 411 61929	KNOB EQUALIZER
433	4822 466 93148	SPACER
434	4822 462 40683	FOOT RUBBER
468	4822 410 62622	KNOB MICRO-MIX

ONLY FOR SETS WITH RECORD PLAYER



MECHANICAL PARTS TURNTABLE

- 461 4822 462 71935 DUST COVER
- 462 4822 466 92642 ADAPTOR
- 463 4822 444 40662 FRONT TURNTABLE
- 464 4822 417 10631 CLAMPING BLOCK
- 466 4822 417 10631 CLAMPING BLOCK
- 467 4822 462 41656 RUBBER PAD
- 468 not a sparepart

DIODES

6428	4822 130 34197	BZX79-C12 (UAW)
6431	4822 130 34174	BZX79-C4V7
6432	4822 130 30861	BZX79-C7V5
6442	4822 130 82021	LTL307G
6450	4822 130 30861	BZX79-C7V5

6453	4822 130 30621	1N4148
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TRANSISTORS

7406	4822 130 40941	BC558
7408	4822 130 40938	BC548
7409	4822 130 41344	BC337-40
7410	4822 130 41344	BC337-40
7411	4822 130 41344	BC337-40

7412	4822 130 41344	BC337-40
7413	4822 130 40938	BC548
7421	4822 130 44196	BC548C
7423	4822 130 40941	BC558
7424	4822 130 41327	BC327-40

7426	4822 130 40941	BC558
7427	4822 130 40938	BC548
7432	4822 130 40938	BC548
7433	4822 130 40938	BC548
7440	4822 130 40941	BC558

7441	4822 130 40941	BC558
7445	5322 130 44779	BC338-40
7446	5322 130 44779	BC338-40
7447	4822 130 44246	BC549C
7448	4822 130 44246	BC549C

INTEGRATED CIRCUITS

7403	4822 209 83274	NJM4560D
7407	4822 209 83274	NJM4560D
7415	4822 209 32448	TMP87PH20F
7418	4822 209 31508	ST24C01
7419	5322 209 10421	HEF4094BP

7420	5322 209 10421	HEF4094BP
7422	4822 214 52009	GP1U58XP
7425	5322 209 86518	MC7805CT

COILS

5401	5322 242 73697	CERAM.RES. 8MHz
5402	4822 157 50961	22μH
5405	4822 157 62552	COIL 2,2μH

RESISTORS

3401	4822 116 52297	68k	5%	0,5W
3402	4822 116 52297	68k	5%	0,5W
3403	4822 116 52264	27k	5%	0,5W
3404	4822 116 52264	27k	5%	0,5W
3405	4822 116 52284	47k	5%	0,5W

3406	4822 116 52284	47k	5%	0,5W
3407	4822 116 52269	3k3	5%	0,5W
3408	4822 116 52269	3k3	5%	0,5W
3409	4822 116 52263	2k7	5%	0,5W
3410	4822 116 52263	2k7	5%	0,5W

3413	4822 116 52234	100k	5%	0,5W
3414	4822 116 52234	100k	5%	0,5W
3415	4822 116 52233	10k	5%	0,5W
3416	4822 116 52233	10k	5%	0,5W
3417	4822 116 52284	47k	5%	0,5W

3418	4822 116 52284	47k	5%	0,5W
3419	4822 116 52284	47k	5%	0,5W
3420	4822 116 52284	47k	5%	0,5W
3421	4822 116 52284	47k	5%	0,5W

RESISTORS

3422	4822 116 52284	47k	5%	0,5W
3423	4822 116 52284	47k	5%	0,5W
3424	4822 116 52284	47k	5%	0,5W
3425	4822 116 52224	470R	5%	0,5W
3426	4822 116 52224	470R	5%	0,5W

3427	4822 116 52257	22k	5%	0,5W
3428	4822 116 52257	22k	5%	0,5W
3431	4822 116 52263	2k7	5%	0,5W
3432	4822 116 52263	2k7	5%	0,5W
3433	4822 116 52219	330R	5%	0,5W

3434	4822 116 52219	330R	5%	0,5W
3435	4822 050 11002	1k	5%	0,2W
3436	4822 050 11002	1k	5%	0,2W
3437	4822 116 52264	27k	5%	0,5W
3438	4822 116 52264	27k	5%	0,5W

3439	4822 116 52224	470R	5%	0,5W
3440	4822 116 52224	470R	5%	0,5W
3441	4822 116 52224	470R	5%	0,5W
3442	4822 116 52224	470R	5%	0,5W
3443	4822 116 52291	56k	5%	0,5W

3444	4822 116 52291	56k	5%	0,5W
3445	4822 051 10333	33k	2%	0,25W
3446	4822 051 10333	33k	2%	0,25W
3447	4822 051 10333	33k	2%	0,25W
3448	4822 051 10333	33k	2%	0,25W

3449	4822 116 52264	27k	5%	0,5W
3450	4822 116 52264	27k	5%	0,5W
3451	4822 051 10333	33k	2%	0,25W
3452	4822 051 10333	33k	2%	0,25W
3455	4822 051 10333	33k	2%	0,25W

3456	4822 051 10333	33k	2%	0,25W
3457	4822 116 52264	27k	5%	0,5W
3458	4822 116 52264	27k	5%	0,5W
3459	4822 051 10333	33k	2%	0,25W
3460	4822 051 10333	33k	2%	0,25W

3461	4822 051 10333	33k	2%	0,25W
3462	4822 051 10333	33k	2%	0,25W
3463	4822 116 52285	470k	5%	0,5W
3464	4822 116 52285	470k	5%	0,5W
3465	4822 116 52296	6k8	5%	0,5W

3466	4822 116 52296	6k8	5%	0,5W
3469	4822 116 52283	4k7	5%	0,5W
3470	4822 116 52283	4k7	5%	0,5W
3471	4822 116 52256	2k2	5%	0,16W
3472	4822 116 52256	2k2	5%	0,16W

3473	4822 116 52257	22k	5%	0,5W
3474	4822 116 52257	22k	5%	0,5W
3475	4822 116 52224	470R	5%	0,5W
3476	4822 116 52224	470R	5%	0,5W
3477	4822 116 52256	2k2	5%	0,16W

3478	4822 116 52283	4k7	5%	0,5W
3480	4822 102 10414	POTM. 2x20kB		
3481	4822 101 21102	Pot 2x 50k		
3482	4822 101 21102	Pot 2x 50k		
3483	4822 101 21102	Pot 2x 50k		

3484	4822 101 21102	Pot 2x 50k		
3485	4822 101 21102	Pot 2x 50k		
3486	4822 050 11002	1k	5%	0,2W
3487	4822 050 11002	1k	5%	0,2W
3488	4822 050 11002	1k	5%	0,2W

3489	4822 050 11002	1k	5%	0,2W
3490	4822 116 52215	220R	5%	0,16W
3491	4822 116 52233	10k	5%	0,5W
3492	4822 116 52228	680R	5%	0,5W

CAPACITORS

2420	4822 122 33195	100pF	10%	50V
2421	4822 122 33848	47pF	5%	50V
2422	4822 122 33848	47pF	5%	50V
2423	4822 122 33848	47pF	5%	50V
2424	4822 122 33848	47pF	5%	50V
2425	4822 122 33195	100pF	10%	50V
2426	4822 122 33195	100pF	10%	50V
2427	4822 124 40242	1μF	20%	63V
2428	4822 124 40242	1μF	20%	63V
2429	4822 126 12702	270pF	10%	50V
2430	4822 126 12702	270pF	10%	50V
2431	4822 122 33197	1nF	10%	50V
2432	4822 122 33197	1nF	10%	50V
2433	4822 122 33197	1nF	10%	50V
2434	4822 122 33197	1nF	10%	50V
2435	4822 126 11714	4,7nF	20%	
2436	4822 126 11714	4,7nF	20%	
2437	4822 126 11714	4,7nF	20%	
2438	4822 126 11714	4,7nF	20%	
2439	4822 126 11585	22nF		50V
2440	4822 126 11585	22nF		50V
2441	4822 126 11585	22nF		50V
2442	4822 126 11585	22nF		50V
2443	4822 121 43526	47nF	5%	100V
2444	4822 121 43526	47nF	5%	100V
2445	4822 121 42408	220nF	5%	63V
2446	4822 121 42408	220nF	5%	63V
2447	4822 122 33848	47pF	5%	50V
2448	4822 122 33848	47pF	5%	50V
2449	4822 122 33195	100pF	10%	50V
2450	4822 122 33195	100pF	10%	50V
2451	4822 124 40246	4,7uF	20%	63V
2452	4822 124 40246	4,7uF	20%	63V
2453	4822 121 51387	10nF	20%	16V
2454	4822 121 51387	10nF	20%	16V
2455	4822 122 33192	27pF	5%	50V
2456	4822 122 33192	27pF	5%	50V
2460	4822 124 40239	0,47μF	20%	63V
2461	4822 126 11585	22nF		50V
2462	4822 126 11585	22nF		50V
2463	4822 126 11585	22nF		50V
2464	4822 124 41525	100μF	20%	25V
2465	4822 124 22263	220μF	20%	25V
2466	4822 124 40248	10μF	20%	63V
2467	4822 124 22263	220μF	20%	25V
2468	4822 124 40248	10μF	20%	63V
2469	4822 124 40242	1μF	20%	63V
2470	4822 124 40242	1μF	20%	63V
2471	4822 122 33519	470pF	10%	50V
2472	4822 122 33519	470pF	10%	50V
2473	4822 124 40433	47μF	20%	25V
2475	4822 124 22263	220μF	20%	25V
2476	4822 124 41525	100μF	20%	25V
2477	4822 124 40433	47μF	20%	25V
2483	4822 122 33197	1nF	10%	50V
2484	4822 122 33197	1nF	10%	50V
2485	4822 122 33197	1nF	10%	50V
2502	4822 124 41525	100μF	20%	25V
2503	4822 124 41525	100μF	20%	25V
2504	5322 124 21643	22μF	20%	40V
2505	4822 126 11585	22nF		50V
2507	4822 126 12702	270pF	10%	50V
2508	4822 122 33848	47pF	5%	50V
2509	4822 122 33848	47pF	5%	50V

CAPACITORS

2510	4822 122 33848	47pF	5%	50V
2512	4822 124 40242	1μF	20%	63V
2513	4822 124 40248	10μF	20%	63V
2514	4822 126 12702	270pF	10%	50V
2552	4822 122 10466	220pF	10%	
2553	4822 122 10466	220pF	10%	
2554	4822 122 33197	1nF	10%	50V
2555	4822 122 33197	1nF	10%	50V
2556	4822 122 33195	100pF	10%	50V
2557	4822 122 33195	100pF	10%	50V
2558	5322 121 42386	100nF	5%	63V

CHIP CAPACITORS

2481	4822 122 33575	220pF	5%	50V
2482	4822 122 33575	220pF	5%	50V

CAPACITORS

2713	4822 124 40433	47µF	20%	25V
2720	4822 122 10174	1,5nF	10%	50V
2721	4822 122 33534	1,2nF	10%	50V
2722	4822 124 22466	1µF	20%	50V
2723	4822 124 22633	22µF	20%	35V
2724	4822 126 11595	470pF	10%	50V
2725	4822 124 40433	47µF	20%	25V
2726	4822 124 40433	47µF	20%	25V
2728	4822 124 40435	10µF	20%	50V
2730	4822 126 11325	4,7nF	10%	50V
2731	4822 121 41857	10nF	5%	250V
2732	4822 122 10158	1nF	10%	50V
2751	4822 122 10173	820pF	10%	50V
2753	4822 124 41643	100µF	20%	16V
2754	4822 126 11595	470pF	10%	50V
2758	4822 124 40435	10µF	20%	50V
2759	4822 121 41857	10nF	5%	250V
2762	4822 126 11311	4,7nF	10%	50V
2770	4822 122 10174	1,5nF	10%	50V
2771	4822 122 33534	1,2nF	10%	50V
2772	4822 124 22466	1µF	20%	50V
2773	4822 124 22633	22µF	20%	35V
2774	4822 126 11595	470pF	10%	50V
2775	4822 124 40184	1000µF	20%	10V
2778	4822 124 40435	10µF	20%	50V
2781	4822 121 41857	10nF	5%	250V
2782	4822 122 10158	1nF	10%	50V
2783	4822 121 41935	12nF	5%	250V
2784	4822 124 40242	1µF	20%	63V
2785	4822 121 51305	15nF	10%	50V
2786	4822 122 10183	100pF	5%	50V
2788	4822 124 40433	47µF	20%	25V
2789	4822 124 40433	47µF	20%	25V
2790	4822 124 40433	47µF	20%	25V
2791	4822 124 22263	220µF	20%	25V

POWER BOARD

MECHANICAL PARTS

4822 255 40128	CLIP TO126
5322 255 40397	CLIP IC

MISCELLANEOUS

1304	4822 267 31176	SPEAKER TERMINAL
1305	4822 264 30175	SOCKET EXT. SUPPLY

DIODES

6250	4822 130 82079	D3SBA20
6251	4822 130 30621	1N4148
6252	4822 130 30621	1N4148
6253	4822 130 34174	BZX79-C4V7
6254	4822 130 30621	1N4148
6255	5322 130 30684	1N4002
6256	5322 130 30684	1N4002
6257	5322 130 30684	1N4002
6258	5322 130 30684	1N4002
6259	4822 130 30621	1N4148
6261	5322 130 30684	1N4002
6350	4822 130 30621	1N4148
6351	4822 130 30621	1N4148
6352	4822 130 34278	BZX79-C6V8
6354	4822 130 30621	1N4148

TRANSISTORS

7250	4822 130 40937	BC548B
7252	4822 130 61236	BD234
7253	4822 130 40937	BC548B
7254	4822 130 40937	BC548B
7255	4822 130 44197	BC558B
7309	4822 130 41344	BC337-40
7310	4822 130 41344	BC337-40
7311	4822 130 41344	BC337-40
7312	4822 130 41344	BC337-40
7350	4822 130 41344	BC337-40
7351	4822 130 40937	BC548B
7352	4822 130 40937	BC548B

INTEGRATED CIRCUITS

7313	4822 209 73356	AN7161N(FP)
7314	4822 209 73356	AN7161N(FP)

COILS

5309	4822 157 62552	COIL 2,2µH
5310	4822 157 62552	COIL 2,2µH
5311	4822 157 62552	COIL 2,2µH
5312	4822 157 62552	COIL 2,2µH
5315	4822 157 62552	COIL 2,2µH
5316	4822 157 62552	COIL 2,2µH

RESISTORS

3250	4822 050 11002	1k	5%	0,2W
3251	4822 116 52233	10k	5%	0,5W
3252	4822 116 52233	10k	5%	0,5W
3254	4822 051 10333	33k	2%	0,25W
3255	4822 050 11002	1k	5%	0,2W
3256	4822 050 11002	1k	5%	0,2W
3257	4822 116 52233	10k	5%	0,5W
3258	4822 116 52283	4k7	5%	0,5W
3259	4822 051 10333	33k	2%	0,25W
3260	4822 116 52233	10k	5%	0,5W

ECO4 Tuner

MISCELLANEOUS

1101	4822 267 10283	SOCKET COAX IEC 75R
1101	4822 265 20598	F-CONNECT. COAX 75R

DIODES

6105	4822 130 83075	HN1V02H
6109	4822 130 82833	1SV228
6122	4822 130 30621	1N4148
6121	4822 130 30621	1N4148
6123	4822 130 30621	1N4148
6124	4822 130 82833	1SV228
6140	4822 130 30621	1N4148
6154	4822 130 30621	1N4148
6174	4822 130 34233	BZX79-B5V1

TRANSISTORS

7102	5322 130 42136	BC848C(CHIP)
7104	5322 130 42136	BC848C(CHIP)
7105	4822 130 60093	2SA838B
7120	4822 130 60163	2SC1047
7121	5322 130 42136	BC848C(CHIP)
7123	5322 130 42136	BC848C(CHIP)
7128	5322 130 42136	BC848C(CHIP)
7152	5322 130 41983	BC858B(CHIP)
7156	4822 130 41344	BC337-40
7157	4822 130 41344	BC337-40
7169	5322 130 41983	BC858B(CHIP)
7170	5322 130 42136	BC848C(CHIP)
7171	5322 130 42136	BC848C(CHIP)
7174	5322 130 41983	BC858B(CHIP)
7178	5322 130 41983	BC858B(CHIP)
7179	5322 130 42136	BC848C(CHIP)

INTEGRATED CIRCUITS

7140	4822 209 32011	TEA5712T/N1 (Radio-IC)
7150	5322 209 14482	HEF4069UBT (6xINVERTER)
7172	4822 209 30606	MM74HCU04M (6xINVERTER)
7173	4822 209 31998	LC7218M SYNTHESIZER

COILS

5105	4822 158 60641	Ferrite ant.,MW/LW
5106	4822 158 60642	Ferrite ant.,MW
5109	4822 156 30947	RF COIL var. 1,5 TURNS
5120	4822 156 30947	RF COIL var. 1,5 TURNS
5122	4822 157 60517	COIL var. 110µH 8%
5123	4822 157 60517	COIL var. 110µH 8%
5140	4822 158 60511	AM-IF FILTER 450kHz
5142	4822 157 70302	AM-IF FILTER 450kHz
5143	4822 242 70665	CER. FILTER 10,7MHZ
5144	4822 242 70665	CER. FILTER 10,7MHZ
5145	4822 242 81362	CER. DISCRIMINATOR
5150	4822 157 50975	1mH 10%
5170	4822 242 72976	CER.RESONATOR 7,2MHZ
5171	4822 157 50963	2,2µH

RESISTORS

3119	4822 116 52224	470R	5%	0,5W
3120	4822 116 52289	5k6	5%	0,16W
3124	4822 116 52256	2k2	5%	0,16W
3132	4822 116 52283	4k7	5%	0,5W
3141	4822 116 52215	220R	5%	0,1 6W
3148	4822 100 11682	POTMETER 47k LIN.		
3151	4822 116 52243	1k5	5%	0,16W
3156	4822 116 52233	10k	5%	0,5W
3162	4822 050 11002	1k	5%	0,2W
3163	4822 050 11002	1k	5%	0,2W
3164	4822 116 52283	4k7	5%	0,5W
3165	4822 116 52283	4k7	5%	0,5W
3170	4822 116 52283	4k7	5%	0,5W
3173	4822 116 52244	15k	5%	0,5W
3174	4822 116 52233	10k	5%	0,5W
3177	4822 116 52233	10k	5%	0,5W
3181	4822 116 52234	100k	5%	0,5W
3189	4822 116 52249	1k8	5%	0,16W
3190	4822 116 52249	1k8	5%	0,16W
3191	4822 116 52249	1k8	5%	0,16W
3192	4822 116 52249	1k8	5%	0,16W
3193	4822 116 52224	470R	5%	0,5W
3194	4822 050 24701	470R	5%	
3195	4822 050 24701	470R	5%	
3197	4822 050 24701	470R	5%	

CHIP RESISTORS

3106	4822 051 20104	100k	5%	0,1W
3107	4822 051 20222	2k2	5%	0,1W
3108	4822 051 20104	100k	5%	0,1W
3109	4822 051 20222	2k2	5%	0,1W
3110	4822 051 20473	47k	5%	0,1W
3111	4822 051 20153	15k	5%	0,1W
3112	4822 051 20223	22k	5%	0,1W
3116	4822 051 20335	3M3	5%	0,1W
3121	4822 051 20104	100k	5%	0,1W
3122	4822 051 20471	470R	5%	0,1W
3123	4822 051 20223	22k	5%	0,1W
3125	4822 051 20472	4k7	5%	0,1W
3128	4822 051 20222	2k2	5%	0,1W
3129	4822 051 20472	4k7	5%	0,1W
3142	4822 051 20222	2k2	5%	0,1W
3144	4822 051 20473	47k	5%	0,1W
3147	4822 051 20184	180k	5%	0,1W
3149	4822 051 20683	68k	5%	0,1W
3154	4822 051 20333	33k	5%	0,1W
3155	4822 051 20333	33k	5%	0,1W
3157	4822 051 20473	47k	5%	0,1W
3158	4822 051 20189	18R	5%	0,1W
3160	4822 051 20823	82k	5%	0,1W
3161	4822 051 20823	82k	5%	0,1W
3166	4822 051 20101	100R	5%	0,1W
3167	4822 051 20008	CHIP JUMPER 0805		
3171	4822 051 20101	100R	5%	0,1W
3172	4822 051 20472	4k7	5%	0,1W
3175	4822 051 20104	100k	5%	0,1W
3176	4822 051 20104	100k	5%	0,1W
3178	4822 051 20104	100k	5%	0,1W
3179	4822 051 20223	22k	5%	0,1W
3180	4822 051 20104	100k	5%	0,1W
3183	4822 051 20223	22k	5%	0,1W
3184	4822 051 20223	22k	5%	0,1W

TUNER 92

MISCELLANEOUS

1101	4822 210 10492	FRONTEND ASSY /02/08
1110	4822 267 10283	SOCKET COAX IEC 75R

DIODES

6101	4822 130 34174	BZX79-C4V7
6102	4822 130 83075	HN1V02H
6109	4822 130 30621	1N4148

TRANSISTORS

7101	4822 130 60163	2SC1047
7104	5322 130 60068	BC558C
7106	5322 130 60068	BC558C
7107	5322 130 41982	BC848 (CHIP)
7108	4822 130 44196	BC548C
7109	4822 130 44196	BC548C
7111	5322 130 41982	BC848 (CHIP)
7112	4822 130 60163	2SC1047
7113	4822 130 44196	BC548C
7114	4822 130 40937	BC548B
7115	4822 130 41024	BF245B
7116	4822 130 60163	2SC1047
7119	5322 130 41983	BC858B(CHIP)
7120	4822 130 44196	BC548C
7150	5322 130 44779	BC338-40
7151	4822 130 60163	2SC1047
7157	5322 130 44779	BC338-40

INTEGRATED CIRCUITS

7103	4822 209 31001	LA1851N
7105	4822 209 30178	LC7218

COILS

5101	4822 157 53192	0,22μH
5103	4822 242 81249	CER. FILTER 10,7MHz
5104	4822 157 63029	AM IF COIL
5105	4822 157 63904	Q-DETECION COIL
5106	4822 157 63802	BIRDY FILTER
5108	4822 157 63912	OSC.COIL AM 3-BAND
5110	4822 242 71878	CERAM.RES. 450kHz
5111	4822 242 81248	CER. FILTER 10,7MHz
5112	4822 242 72976	CER.RESONATOR 7,2MHz
5113	4822 242 81249	CER. FILTER 10,7MHz
5114	4822 152 20699	560μH
5127	4822 158 60643	FERROCEPTOR

RESISTORS

3101	4822 052 10478	4R7	5%	NFR
3108	4822 116 52224	470R	5%	0,5W
3113	4822 050 22201	220R	2%	0,25W
3118	4822 050 22201	220R	2%	0,25W
3120	4822 052 10229	22R	5%	0,33W
3125	4822 100 11213	22k	30%	POT.
3131	4822 100 11319	4k7 trimpot.		
3134	4822 050 15602	5k6	1%	0,4W
3138	4822 116 83922	150R	5%	1W
3147	4822 050 15602	5k6	1%	0,4W
3150	4822 050 25601	560R	1%	0,6W
3151	4822 050 24702	4k7	1%	0,6W
3155	4822 050 22201	220R	2%	0,25W
3158	4822 050 24702	4k7	1%	0,6W
3162	4822 050 22701	270R	1%	0,6W

RESISTORS

3165	4822 050 21002	1k	1%	0,6W
3166	4822 050 21002	1k	1%	0,6W
3167	4822 050 21002	1k	1%	0,6W
3183	4822 050 21003	10k	2%	0,25W
3186	4822 050 21003	10k	2%	0,25W

3225	4822 050 21002	1k	1%	0,6W
3244	5322 116 44005	250R	25%	

CHIP RESISTORS

3102	4822 051 20224	220k	5%	0,1W
3104	4822 051 20154	150k	5%	0,1W
3105	4822 051 20562	5k6	5%	0,1W
3106	4822 051 20829	82R	5%	0,1W
3107	4822 051 20104	100k	5%	0,1W
3114	4822 051 20332	3k3	5%	0,1W
3115	4822 051 20391	390R	5%	0,1W
3116	4822 051 20478	4R7	5%	0,1W
3117	4822 051 20331	330R	5%	0,1W
3121	4822 051 20272	2k7	5%	0,1W
3122	4822 051 20562	5k6	5%	0,1W
3123	4822 051 20223	22k	5%	0,1W
3124	4822 051 20103	10k	5%	0,1W
3126	4822 051 20123	12k	2%	0,1W
3127	4822 051 20562	5k6	5%	0,1W
3129	4822 051 20103	10k	5%	0,1W
3132	4822 051 20183	18k	5%	0,1W
3133	4822 051 20008	CHIP JUMPER 0805		
3135	4822 051 10008	CHIP JUMPER 1206		
3141	4822 051 20472	4k7	5%	0,1W
3142	4822 051 20472	4k7	5%	0,1W
3143	4822 051 20821	820R	5%	0,1W
3144	4822 051 20331	330R	5%	0,1W
3145	4822 051 20271	270R	5%	0,1W
3148	4822 051 20104	100k	5%	0,1W
3149	4822 051 20472	4k7	5%	0,1W
3152	4822 051 20103	10k	5%	0,1W
3153	4822 051 20274	270k	5%	0,1W
3156	4822 051 20153	15k	5%	0,1W
3157	4822 051 20472	4k7	5%	0,1W
3159	4822 051 20104	100k	5%	0,1W
3160	4822 051 20104	100k	5%	0,1W
3163	4822 051 20103	10k	5%	0,1W
3164	4822 051 20473	47k	5%	0,1W
3170	4822 051 20103	10k	5%	0,1W
3171	4822 051 20223	22k	5%	0,1W
3172	4822 051 20472	4k7	5%	0,1W
3173	4822 051 20223	22k	5%	0,1W
3184	4822 051 20332	3k3	5%	0,1W
3185	4822 051 20103	10k	5%	0,1W
3187	4822 051 20103	10k	5%	0,1W
3190	4822 051 20479	47R	5%	0,1W
3194	4822 051 20472	4k7	5%	0,1W
3196	4822 051 20008	CHIP JUMPER 0805		
3197	4822 051 20008	CHIP JUMPER 0805		
3198	4822 051 20103	10k	5%	0,1W
3200	4822 051 20008	CHIP JUMPER 0805		
3201	4822 051 20103	10k	5%	0,1W
3202	4822 051 20008	CHIP JUMPER 0805		
3223	4822 051 20474	470k	5%	0,1W

CD BOARDS

MISCELLANEOUS

4822 361 21423	MOTOR
4822 361 21423	MOTOR
4822 255 40991	SOCKET LED
1822 4822 276 13106	SWITCH
1820 4822 276 13106	SWITCH
1821 4822 276 13106	SWITCH
1830 4822 071 51601	FUSE 160mA
1831 4822 071 51601	FUSE 160mA
1840 4822 276 13114	TACT SWITCH
1841 4822 276 13114	TACT SWITCH
4822 323 50157	CONNECTION CABLE

DIODES

6800 4822 130 30621	1N4148
6801 4822 130 34173	BZX79-C5V6
6802 4822 130 31981	BZX79-C3V9

TRANSISTORS

7826 5322 130 42012	BC858 (CHIP)
7827 4822 130 61207	BC848 (CHIP)
7828 4822 130 42616	BC818-40 (UAW)
7829 5322 130 42012	BC858 (CHIP)
7830 4822 130 42616	BC818-40 (UAW)
7831 5322 130 42012	BC858 (CHIP)
7832 4822 130 83031	BPW85
7820 4822 130 60887	BF840
7821 5322 130 41982	BC848 (CHIP)
7822 5322 130 41983	BC858B(CHIP)
7823 5322 130 41982	BC848 (CHIP)
7824 5322 130 41982	BC848 (CHIP)
7825 4822 130 42675	BC818

INTEGRATED CIRCUITS

7804 4822 209 32036	UM6264BM-10L, RAM
7805 4822 209 30388	SAA7341GP
7806 4822 209 32419	MC68HC05D9-CDC MODUL
7807 4822 209 72587	TCA372DP2
7808 4822 209 83274	NJM4560D
7809 4822 209 83274	NJM4560D
7810 4822 209 71579	TY40408
7800 4822 209 31064	TDA1301T/N1
7801 4822 209 71579	TY40408
7802 4822 209 72587	TCA372DP2
7803 4822 209 72587	TCA372DP2

COILS

1801 4822 242 81151	X-TAL 16,934MHz
1840 4822 242 72527	CERAMIC RES. 4.0 MHz
1802 4822 242 73557	CERAMIC RES. 8,46MHz

RESISTORS

3856 4822 116 52256	2k2	5%	0,16W
3860 4822 050 11002	1k	5%	0,2W
3861 4822 050 22205	2M2	1%	0,6W
3862 4822 116 52256	2k2	5%	0,16W
3863 4822 052 10338	3R3		NFR25
3865 4822 116 52226	560R	5%	0,5W
3868 4822 116 52284	47k	5%	0,5W
3869 4822 116 52234	100k	5%	0,5W
3873 4822 116 52257	22k	5%	0,5W
3874 4822 116 52284	47k	5%	0,5W

RESISTORS

3876 4822 052 10229	22R	5%	0,33W
3878 4822 052 10229	22R	5%	0,33W
3879 4822 116 52269	3k3	5%	0,5W
3880 4822 050 21503	15k	1%	0,6W
3881 4822 050 21503	15k	1%	0,6W
3882 4822 116 52257	22k	5%	0,5W
3883 4822 050 11002	1k	5%	0,2W
3884 4822 116 52257	22k	5%	0,5W
3885 4822 116 52244	15k	5%	0,5W
3886 4822 116 52251	18k	5%	0,5W
3887 4822 116 52238	12k	5%	0,5W
3888 4822 050 21503	15k	1%	0,6W
3889 4822 050 21503	15k	1%	0,6W
3890 4822 050 11002	1k	5%	0,2W
3891 4822 052 10229	22R	5%	0,33W
3892 4822 052 10229	22R	5%	0,33W
3893 4822 116 52233	10k	5%	0,5W
3894 4822 116 52233	10k	5%	0,5W
3895 4822 116 52233	10k	5%	0,5W
3896 4822 116 52251	18k	5%	0,5W
3897 4822 116 52238	12k	5%	0,5W
3898 4822 050 21503	15k	1%	0,6W
3899 4822 116 52226	560R	5%	0,5W
3901 4822 116 52233	10k	5%	0,5W
3905 4822 116 52233	10k	5%	0,5W
3906 4822 116 52233	10k	5%	0,5W
3907 4822 116 52233	10k	5%	0,5W
4800 4822 050 11002	1k	5%	0,2W
4801 4822 050 21503	15k	1%	0,6W
4802 4822 116 52257	22k	5%	0,5W
4803 4822 116 52244	15k	5%	0,5W
4804 4822 050 21503	15k	1%	0,6W
4805 4822 050 21503	15k	1%	0,6W
4806 4822 050 11002	1k	5%	0,2W
4807 4822 116 52269	3k3	5%	0,5W
4808 4822 116 52257	22k	5%	0,5W
4813 4822 116 52233	10k	5%	0,5W
4814 4822 116 52233	10k	5%	0,5W
4817 4822 116 52233	10k	5%	0,5W
4819 4822 116 52233	10k	5%	0,5W
4820 4822 052 10478	4R7	5%	NFR
4824 4822 116 52233	10k	5%	0,5W
4825 4822 116 52233	10k	5%	0,5W
4826 4822 116 52233	10k	5%	0,5W
4828 4822 116 52238	12k	5%	0,5W
4829 4822 116 52238	12k	5%	0,5W
4830 4822 052 10108	1R	5%	0,33W
4831 4822 116 52276	3k9	5%	0,5W
4832 4822 116 52238	12k	5%	0,5W
4834 4822 052 10108	1R	5%	0,33W
4835 4822 052 10229	22R	5%	0,33W
4836 4822 052 10108	1R	5%	0,33W
4837 4822 052 10108	1R	5%	0,33W
4840 4822 116 52233	10k	5%	0,5W
4847 4822 116 52233	10k	5%	0,5W
4848 4822 116 52233	10k	5%	0,5W
4849 4822 116 52233	10k	5%	0,5W
4859 4822 052 10108	1R	5%	0,33W
3800 4822 116 52239	120k	5%	0,5W
3801 4822 116 52233	10k	5%	0,5W
3802 4822 116 52239	120k	5%	0,5W
3803 4822 116 52233	10k	5%	0,5W
3804 4822 116 52291	56k	5%	0,5W
3805 4822 116 52233	10k	5%	0,5W

CD BOARDS

MISCELLANEOUS

1820	4822 276 13106	SWITCH
1821	4822 276 13106	SWITCH
1822	4822 276 13106	SWITCH
1830	4822 071 51601	FUSE 160mA
1831	4822 071 51601	FUSE 160mA
1840	4822 276 13114	TACT SWITCH
1841	4822 276 13114	TACT SWITCH
	4822 323 50157	CONNECTION CABLE
	4822 255 40991	SOCKET LED

DIODES

6800	4822 130 30621	1N4148
6801	4822 130 34173	BZX79-C5V6
6802	4822 130 31981	BZX79-C3V9

TRANSISTORS

7820	4822 130 60887	BF840
7821	5322 130 41982	BC848 (CHIP)
7822	5322 130 41983	BC858B(CHIP)
7823	5322 130 41982	BC848 (CHIP)
7824	5322 130 41982	BC848 (CHIP)
7825	4822 130 42675	BC818
7826	5322 130 42012	BC858 (CHIP)
7827	4822 130 61207	BC848 (CHIP)
7828	4822 130 42616	BC818-40 (UAW)
7829	5322 130 42012	BC858 (CHIP)
7830	4822 130 42616	BC818-40 (UAW)
7831	5322 130 42012	BC858 (CHIP)
7832	4822 130 83031	BPW85

INTEGRATED CIRCUITS

7800	4822 209 31064	TDA1301T/N1
7801	4822 209 71579	TY40408
7802	4822 209 72587	TCA372DP2
7803	4822 209 72587	TCA372DP2
7804	4822 209 32036	UM6264BM-10L, RAM
7805	4822 209 30388	SAA7341GP
7806	4822 209 32419	MC68HC05D9-CDC MODUL
7807	4822 209 72587	TCA372DP2
7808	4822 209 83274	NJM4560D
7809	4822 209 83274	NJM4560D
7810	4822 209 71579	TY40408

COILS

1801	4822 242 81151	X-TAL 16,934MHz
1802	4822 242 73557	CERAMIC RES. 8,46MHz
1840	4822 242 72527	CERAMIC RES. 4.0 MHz
5801	4822 157 53447	BEAD INDUCTOR
5802	4822 157 53447	BEAD INDUCTOR

RESISTORS

3800	4822 116 52239	120k	5%	0,5W
3801	4822 116 52233	10k	5%	0,5W
3802	4822 116 52239	120k	5%	0,5W
3803	4822 116 52233	10k	5%	0,5W
3804	4822 116 52291	56k	5%	0,5W
3805	4822 116 52233	10k	5%	0,5W
3806	4822 116 52233	10k	5%	0,5W
3807	4822 116 52233	10k	5%	0,5W
3808	4822 116 52233	10k	5%	0,5W
3809	4822 052 10478	4R7	5%	NFR
3810	4822 052 10478	4R7	5%	NFR
3812	4822 050 11002	1k	5%	0,2W
3813	4822 050 11002	1k	5%	0,2W
3814	4822 116 52233	10k	5%	0,5W
3815	4822 116 52175	100R	5%	0,5W
3817	4822 116 52244	15k	5%	0,5W
3818	4822 116 52244	15k	5%	0,5W
3821	4822 116 52283	4k7	5%	0,5W
3822	4822 116 52233	10k	5%	0,5W
3824	4822 052 10229	22R	5%	0,33W
3825	4822 116 52244	15k	5%	0,5W
3826	4822 116 52244	15k	5%	0,5W
3828	4822 116 52296	6k8	5%	0,5W
3829	4822 116 52233	10k	5%	0,5W
3830	4822 052 10229	22R	5%	0,33W
3832	4822 116 52244	15k	5%	0,5W
3833	4822 052 10478	4R7	5%	NFR
3835	4822 116 52296	6k8	5%	0,5W
3836	4822 116 52233	10k	5%	0,5W
3837	4822 052 10478	4R7	5%	NFR
3838	4822 052 10229	22R	5%	0,33W
3839	4822 116 52175	100R	5%	0,5W
3840	4822 116 52277	39k	5%	0,5W
3841	4822 050 11002	1k	5%	0,2W
3842	4822 116 52175	100R	5%	0,5W
3843	4822 116 52249	1k8	5%	0,16W
3844	4822 116 52175	100R	5%	0,5W
3850	4822 050 11002	1k	5%	0,2W
3852	4822 116 52175	100R	5%	0,5W
3853	4822 116 52249	1k8	5%	0,16W
3854	4822 050 11002	1k	5%	0,2W
3856	4822 116 52256	2k2	5%	0,16W
3860	4822 050 11002	1k	5%	0,2W
3861	4822 050 22205	2M2	1%	0,6W
3862	4822 116 52256	2k2	5%	0,16W
3863	4822 052 10338	3R3	NFR25	
3865	4822 116 52226	560R	5%	0,5W
3868	4822 116 52284	47k	5%	0,5W
3869	4822 116 52234	100k	5%	0,5W
3873	4822 116 52257	22k	5%	0,5W
3874	4822 116 52284	47k	5%	0,5W
3876	4822 052 10229	22R	5%	0,33W
3878	4822 052 10229	22R	5%	0,33W
3879	4822 116 52269	3k3	5%	0,5W
3880	4822 050 21503	15k	1%	0,6W
3881	4822 050 21503	15k	1%	0,6W
3882	4822 116 52257	22k	5%	0,5W
3883	4822 050 11002	1k	5%	0,2W
3884	4822 116 52257	22k	5%	0,5W
3885	4822 116 52244	15k	5%	0,5W

RESISTORS

3886	4822 116 52251	18k	5%	0,5W
3887	4822 116 52238	12k	5%	0,5W
3888	4822 050 21503	15k	1%	0,6W
3889	4822 050 21503	15k	1%	0,6W
3890	4822 050 11002	1k	5%	0,2W
3891	4822 052 10229	22R	5%	0,33W
3892	4822 052 10229	22R	5%	0,33W
3893	4822 116 52233	10k	5%	0,5W
3894	4822 116 52233	10k	5%	0,5W
3895	4822 116 52233	10k	5%	0,5W
3896	4822 116 52251	18k	5%	0,5W
3897	4822 116 52238	12k	5%	0,5W
3898	4822 050 21503	15k	1%	0,6W
3899	4822 116 52226	560R	5%	0,5W
3901	4822 116 52233	10k	5%	0,5W
3905	4822 116 52233	10k	5%	0,5W
3906	4822 116 52233	10k	5%	0,5W
3907	4822 116 52233	10k	5%	0,5W
4800	4822 050 11002	1k	5%	0,2W
4801	4822 050 21503	15k	1%	0,6W
4802	4822 116 52257	22k	5%	0,5W
4803	4822 116 52244	15k	5%	0,5W
4804	4822 050 21503	15k	1%	0,6W
4805	4822 050 21503	15k	1%	0,6W
4806	4822 050 11002	1k	5%	0,2W
4807	4822 116 52269	3k3	5%	0,5W
4808	4822 116 52257	22k	5%	0,5W
4813	4822 116 52233	10k	5%	0,5W
4814	4822 116 52233	10k	5%	0,5W
4817	4822 116 52233	10k	5%	0,5W
4819	4822 116 52233	10k	5%	0,5W
4820	4822 052 10478	4R7	5%	NFR
4824	4822 116 52233	10k	5%	0,5W
4825	4822 116 52233	10k	5%	0,5W
4826	4822 116 52233	10k	5%	0,5W
4828	4822 116 52238	12k	5%	0,5W
4829	4822 116 52238	12k	5%	0,5W
4830	4822 052 10108	1R	5%	0,33W
4831	4822 116 52276	3k9	5%	0,5W
4832	4822 116 52238	12k	5%	0,5W
4834	4822 052 10108	1R	5%	0,33W
4835	4822 052 10229	22R	5%	0,33W
4836	4822 052 10108	1R	5%	0,33W
4837	4822 052 10108	1R	5%	0,33W
4840	4822 116 52233	10k	5%	0,5W
4847	4822 116 52233	10k	5%	0,5W
4848	4822 116 52233	10k	5%	0,5W
4849	4822 116 52233	10k	5%	0,5W
4850	4822 116 52231	820R	5%	0,5W
4851	4822 116 52238	12k	5%	0,5W
4853	4822 116 52238	12k	5%	0,5W
4854	4822 116 52238	12k	5%	0,5W
4855	4822 052 10229	22R	5%	0,33W
4856	4822 052 10108	1R	5%	0,33W
4857	4822 116 52284	47k	5%	0,5W
4858	4822 116 52284	47k	5%	0,5W
4859	4822 052 10108	1R	5%	0,33W
4892	4822 116 52217	270R	5%	0,5W
4893	4822 116 52217	270R	5%	0,5W

CHIP RESISTORS

3811	4822 051 20105	1M	5%	0,1W
3816	4822 051 20103	10k	5%	0,1W
3820	4822 051 20682	6k8	5%	0,1W
3827	4822 051 20103	10k	5%	0,1W
3831	4822 051 20153	15k	5%	0,1W
3834	4822 117 10362	7k5	1%	0,1W
3845	4822 051 20431	430R	5%	0,1W
3846	4822 051 20431	430R	5%	0,1W
3847	4822 051 20334	330k	5%	0,1W
3848	4822 051 20101	100R	5%	0,1W
3849	4822 051 20303	30k	5%	0,1W
3851	4822 051 20362	3k6	5%	0,1W
3855	4822 051 20431	430R	5%	0,1W
3857	4822 051 20223	22k	5%	0,1W
3858	4822 051 20223	22k	5%	0,1W
3864	4822 051 20105	1M	5%	0,1W
3866	4822 051 20182	1k8	5%	0,1W
3867	4822 051 20182	1k8	5%	0,1W
3871	4822 051 20104	100k	5%	0,1W
3875	4822 051 20392	3k9	5%	0,1W
3877	4822 051 20103	10k	5%	0,1W
4809	4822 051 20473	47k	5%	0,1W
4810	4822 051 20103	10k	5%	0,1W
4811	4822 051 20103	10k	5%	0,1W
4812	4822 051 20103	10k	5%	0,1W
4815	4822 051 20103	10k	5%	0,1W
4818	4822 051 20332	3k3	5%	0,1W
4821	4822 051 20561	560R	5%	0,1W
4822	4822 051 10102	1k	2%	0,25W
4823	4822 051 20224	220k	5%	0,1W
4827	4822 051 20223	22k	5%	0,1W
4833	4822 051 20123	12k	2%	0,1W
4838	4822 051 20103	10k	5%	0,1W
4841	4822 051 20103	10k	5%	0,1W
4842	4822 051 20224	220k	5%	0,1W
4843	4822 051 20562	5k6	5%	0,1W
4852	4822 051 20123	12k	2%	0,1W
4860	4822 051 10102	1k	2%	0,25W
4861	4822 051 20471	470R	5%	0,1W
4862	4822 051 20471	470R	5%	0,1W
4863	4822 051 10008	CHIP JUMPER 1206		
4864	4822 051 20561	560R	5%	0,1W
4877	4822 051 10008	CHIP JUMPER 1206		
4878	4822 051 10008	CHIP JUMPER 1206		
4881	4822 051 10008	CHIP JUMPER 1206		
4882	4822 051 10008	CHIP JUMPER 1206		
4883	4822 051 10008	CHIP JUMPER 1206		
4885	4822 051 10008	CHIP JUMPER 1206		
4886	4822 051 10008	CHIP JUMPER 1206		
4888	4822 051 10008	CHIP JUMPER 1206		
4889	4822 051 10008	CHIP JUMPER 1206		
4890	4822 051 20271	270R	5%	0,1W
4894	4822 051 10008	CHIP JUMPER 1206		
4895	4822 051 10008	CHIP JUMPER 1206		
4896	4822 051 10008	CHIP JUMPER 1206		
4897	4822 051 10008	CHIP JUMPER 1206		
4898	4822 051 10008	CHIP JUMPER 1206		
4899	4822 051 10008	CHIP JUMPER 1206		

CAPACITORS

2898	4822 124 40433	47µF	20%	25V
CHIP CAPACITORS				
2844	5322 122 32452	47pF	5%	50V
2845	4822 122 33175	2,2nF	20%	50V
2847	4822 122 33496	100nF	10%	63V
2849	5322 126 10223	4,7nF	10%	63V
2850	4822 122 33496	100nF	10%	63V
2852	5322 122 32654	22nF	10%	63V
2854	5322 122 32659	33pF	5%	50V
2855	4822 122 33496	100nF	10%	63V
2860	5322 126 10223	4,7nF	10%	63V
2861	5322 126 10223	4,7nF	10%	63V
2862	5322 122 32452	47pF	5%	50V
2863	5322 122 32452	47pF	5%	50V
2864	4822 122 32542	47nF	10%	63V
2865	4822 122 33496	100nF	10%	63V
2868	4822 122 33177	10nF	20%	50V
2871	4822 122 33496	100nF	10%	63V
2872	4822 122 33496	100nF	10%	63V
2873	5322 122 31863	330pF	5%	50V
2875	4822 122 33496	100nF	10%	63V
2876	4822 122 33216	270pF	5%	50V
2878	4822 122 33481	1,8nF	5%	NP0
2879	4822 122 33496	100nF	10%	63V
2881	4822 122 33216	270pF	5%	50V
2883	5322 122 31863	330pF	5%	50V
2885	4822 122 33481	1,8nF	5%	NP0
2887	5322 122 32654	22nF	10%	63V
2888	4822 122 33496	100nF	10%	63V
2889	4822 122 33496	100nF	10%	63V
2890	4822 122 33496	100nF	10%	63V
2892	4822 122 33496	100nF	10%	63V
2893	4822 122 33496	100nF	10%	63V
2895	4822 122 33496	100nF	10%	63V
2902	4822 122 33496	100nF	10%	63V
2905	4822 122 33175	2,2nF	20%	50V
2906	5322 122 32452	47pF	5%	50V
2907	5322 122 32452	47pF	5%	50V
2800	4822 126 10326	180pF	5%	
2801	4822 126 10326	180pF	5%	
2802	5322 122 31863	330pF	5%	50V
2803	5322 122 31865	1,5nF	10%	63V
2804	5322 116 80853	560pF	5%	63V
2805	4822 122 33575	220pF	5%	50V
2806	4822 122 33575	220pF	5%	50V
2807	4822 122 33575	220pF	5%	50V
2808	4822 122 33575	220pF	5%	50V
2809	4822 122 33575	220pF	5%	50V
2810	4822 122 33575	220pF	5%	50V
2811	4822 122 33496	100nF	10%	63V
2813	5322 122 32654	22nF	10%	63V
2814	4822 122 33496	100nF	10%	63V
2815	4822 122 33496	100nF	10%	63V
2817	4822 126 10326	180pF	5%	
2818	4822 122 33496	100nF	10%	63V
2820	5322 126 10465	3,9nF	10%	63V
2821	4822 122 33496	100nF	10%	63V
2823	4822 122 33496	100nF	10%	63V
2824	4822 126 10326	180pF	5%	
2825	4822 122 32627	2,2nF	10%	50V
2826	4822 122 33496	100nF	10%	63V
2827	4822 122 33175	2,2nF	20%	50V

CHIP CAPACITORS

2828	4822 122 33496	100nF	10%	63V
2830	4822 122 33342	33nF	10%	63V
2831	4822 122 33496	100nF	10%	63V
2833	4822 122 33496	100nF	10%	63V
2835	4822 122 33496	100nF	10%	63V
2836	5322 122 32452	47pF	5%	50V
2837	5322 122 32452	47pF	5%	50V
2838	5322 122 32531	100pF	5%	50V
2839	5322 122 32965	18pF	5%	50V
2840	4822 126 10326	180pF	5%	
2842	5322 122 31863	330pF	5%	50V
2843	4822 126 10326	180pF	5%	
2856	4822 122 33496	100nF	10%	63V

ACCESSORIES

4822 321 10831	AC CORD /20, /21, /22
4822 321 10918	AC CORD /25
4822 321 10954	AC CORD /30
4822 321 10883	AC CORD /37
4822 218 10513	IR REMOTE CONTROL
4822 445 10362	SPEAKER AS640/20, /22, /25
4822 445 10365	SPEAKER AS640/37
4822 445 10366	SPEAKER AS640/20B, /21
4822 445 10366	SPEAKER AS645/21, /30
4822 445 10368	SPEAKER AS641/37, AS642/37

SET PARTS

1006	4822 130 83092	LED from Volume pot
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CAPACITORS

2812	5322 124 21643	22μF	20%	40V
2819	5322 124 41431	22μF	20%	25V
2822	5322 124 41431	22μF	20%	25V
2829	5322 124 41431	22μF	20%	25V
2832	5322 124 41431	22μF	20%	25V
2834	5322 124 41431	22μF	20%	25V
2841	5322 124 21643	22μF	20%	40V
2846	4822 124 40849	330μF	20%	16V
2848	5322 121 42661	330nF	5%	63V
2851	4822 124 41584	100μF	20%	10V
2853	4822 124 40242	1μF	20%	63V
2859	4822 124 40242	1μF	20%	63V
2869	4822 124 40433	47μF	20%	25V
2870	4822 124 41584	100μF	20%	10V
2874	4822 124 40849	330μF	20%	16V
2877	4822 124 40246	4,7μF	20%	63V
2880	4822 124 40246	4,7μF	20%	63V
2882	4822 124 40246	4,7μF	20%	63V
2884	4822 124 40433	47μF	20%	25V
2886	4822 124 40433	47μF	20%	25V
2891	4822 124 40201	1000μF	20%	16V
2894	4822 124 40201	1000μF	20%	16V
2896	5322 124 41431	22μF	20%	25V
2897	4822 124 40433	47μF	20%	25V
2898	4822 124 40433	47μF	20%	25V

CHIP CAPACITORS

2800	4822 126 10326	180pF	5%	
2801	4822 126 10326	180pF	5%	
2802	5322 122 31863	330pF	5%	50V
2803	5322 122 31865	1,5nF	10%	63V
2804	5322 116 80853	560pF	5%	63V
2805	4822 122 33575	220pF	5%	50V
2806	4822 122 33575	220pF	5%	50V
2807	4822 122 33575	220pF	5%	50V
2808	4822 122 33575	220pF	5%	50V
2809	4822 122 33575	220pF	5%	50V
2810	4822 122 33575	220pF	5%	50V
2811	4822 122 33496	100nF	10%	63V
2813	5322 122 32654	22nF	10%	63V
2814	4822 122 33496	100nF	10%	63V
2815	4822 122 33496	100nF	10%	63V
2817	4822 126 10326	180pF	5%	
2818	4822 122 33496	100nF	10%	63V
2820	5322 126 10465	3,9nF	10%	63V
2821	4822 122 33496	100nF	10%	63V
2823	4822 122 33496	100nF	10%	63V
2824	4822 126 10326	180pF	5%	
2825	4822 122 32627	2,2nF	10%	50V
2826	4822 122 33496	100nF	10%	63V
2827	4822 122 33175	2,2nF	20%	50V
2828	4822 122 33496	100nF	10%	63V
2830	4822 122 33342	33nF	10%	63V
2831	4822 122 33496	100nF	10%	63V
2833	4822 122 33496	100nF	10%	63V
2835	4822 122 33496	100nF	10%	63V
2836	5322 122 32452	47pF	5%	50V
2837	5322 122 32452	47pF	5%	50V
2838	5322 122 32531	100pF	5%	50V
2839	5322 122 32965	18pF	5%	50V
2840	4822 126 10326	180pF	5%	

CHIP CAPACITORS

2842	5322 122 31863	330pF	5%	50V
2843	4822 126 10326	180pF	5%	
2844	5322 122 32452	47pF	5%	50V
2845	4822 122 33175	2,2nF	20%	50V
2847	4822 122 33496	100nF	10%	63V
2849	5322 126 10223	4,7nF	10%	63V
2850	4822 122 33496	100nF	10%	63V
2852	5322 122 32654	22nF	10%	63V
2854	5322 122 32659	33pF	5%	50V
2855	4822 122 33496	100nF	10%	63V
2856	4822 122 33496	100nF	10%	63V
2860	5322 126 10223	4,7nF	10%	63V
2861	5322 126 10223	4,7nF	10%	63V
2862	5322 122 32452	47pF	5%	50V
2863	5322 122 32452	47pF	5%	50V
2864	4822 122 32542	47nF	10%	63V
2865	4822 122 33496	100nF	10%	63V
2868	4822 122 33177	10nF	20%	50V
2871	4822 122 33496	100nF	10%	63V
2872	4822 122 33496	100nF	10%	63V
2873	5322 122 31863	330pF	5%	50V
2875	4822 122 33496	100nF	10%	63V
2876	4822 122 33216	270pF	5%	50V
2878	4822 122 33481	1,8nF	5%	NP0
2879	4822 122 33496	100nF	10%	63V
2881	4822 122 33216	270pF	5%	50V
2883	5322 122 31863	330pF	5%	50V
2885	4822 122 33481	1,8nF	5%	NP0
2887	5322 122 32654	22nF	10%	63V
2888	4822 122 33496	100nF	10%	63V
2889	4822 122 33496	100nF	10%	63V
2890	4822 122 33496	100nF	10%	63V
2892	4822 122 33496	100nF	10%	63V
2893	4822 122 33496	100nF	10%	63V
2895	4822 122 33496	100nF	10%	63V
2905	4822 122 33175	2,2nF	20%	50V
2906	5322 122 32452	47pF	5%	50V
2907	5322 122 32452	47pF	5%	50V

ACCESSORIES

4822 321 10831	AC CORD /20, /21, /22
4822 321 10918	AC CORD /25
4822 321 10954	AC CORD /30
4822 321 10883	AC CORD /37
4822 218 10513	IR REMOTE CONTROL
4822 445 10362	SPEAKER BOX AS640/20, /22, /25
4822 445 10365	SPEAKER BOX AS640/37
4822 445 10366	SPEAKER BOX AS640/20B, /21
4822 445 10366	SPEAKER BOX AS645/21, /30
4822 445 10368	SPEAKER BOX AS641/37, AS642/37

SET PARTS

1006	4822 130 83092	LED from Volume pot
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Service Service Service

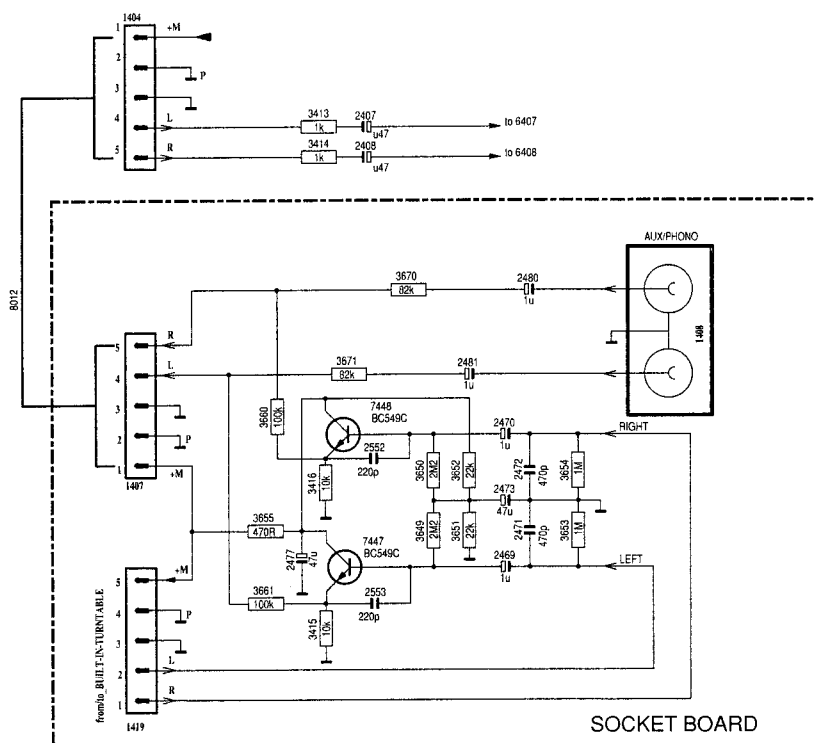
Product Service Group CE Audio

Service Information

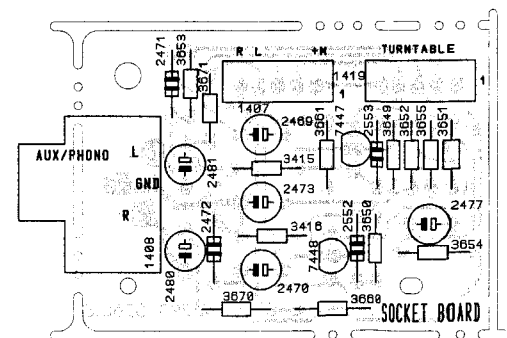
Already published Service Informations: A93-360 (4822 725 24909)

Fault: Playback of a record isn't possible if an external source is connected to the AUX/PHONO socket (1408). **Only valid for sets with internal record player.**

Therefore the circuit diagram and the component layout have been changed from production week 9344 onwards.



Component side view



- For reasons of standardisations the headphone socket has been changed to **4822 267 40659**.
Introduction date: Week 9336.
- To reduce residual noise the value of the motorpot has been changed to 50k Ω . (**4822 101 90248**)
Introduction date: Week 9336.
- To improve frequency response of the *POWER BOARD*, capacitors 2323 and 2324 have been changed to 1n5 (**4822 126 12878**).
Introduction date: Week 9332.
- To increase the input level for the *RECORDER BOARD*, resistors 3437 and 3438 have been changed to 18k Ω . (**4822 116 52264**)
Introduction date: Week 9332.
- **Fault:** "Ticking noise" is audible during record from CD.

Solution: Following changes have been done on the *FRONT BOARD*.

Resistors 3405,3406 have been changed to 3k9.	Service code 4822 116 52276 .
Resistors 3437,3438 have been changed to 3k9.	Service code 4822 116 52276 .
Resistors 3605,3606 have been changed to 1k0.	Service code 4822 050 11002 .
Resistor 3609 has been changed to 1k0.	Service code 4822 050 11002 .
Resistors 3607,3608 have been changed to 1k0.	Service code 4822 050 11002 .
Resistors 3407,3408 have been changed to 270 Ω .	Service code 4822 116 52217 .
Capacitor 2468 has been changed to 47 μ F.	Service code 4822 124 40433 .

Introduction date: Week 9336.

- Correction to the Service Manual
Dismantling hints - picture 6 on page 11.
Colour of wires to the stand by LED has been interchanged from production start onwards.
Correct is: long pin of LED connected to the grey wire
short pin of LED connected to the black wire
- Due to cost reduction following changes have been done on the *POWER BOARD*.
Introduction date: Week 9336.
 - Capacitors 2325 and 2326 have been changed to 100 μ F. Service code **4822 124 41525**.
 - The complete **switch on mute** circuit has been deleted. (7350, 7351, 3351, 3352, 3353, 6352, 2357)
 - Resistor 3264 has been replaced by a wire bridge.
- Except for the /21, /22 and /30 versions
 - Coils 5309, 5311, 5312, 5315 and 5316 have been replaced by wire bridges.
 - Resistors 3323, 3324, 3325 and 3326 have been replaced by wire bridges too.
 - Capacitors 2266, 2267, 2321 and 2322 have been deleted.
(These components are only necessary to fulfil FTZ requirements.)
- Due to cost reduction pos. 501 (see exploded view of set) has been omitted. Therefore pos. 401 (side left) has been adapted.
Introduction date: Week 9336.

Survey of changes - ECO 4 tuner board

Introduction date	Change	Service Code	Reason
Wk 9333	3148 from 47k to 100k	4822 100 11163	to ease VCO adjustment
	3149 from 68k to 56k	4822 051 20563	
	3186 from 47k to 100k	-	increase of search sensitivity (back to normal level)
	3112 from 27k to 22k	-	reduction of distortion in STEREO mode
Wk 9328	3112 from 22k to 24k	-	to adapt STEREO switching level.
Wk 9329	7140 from TEA5712T/N1 to TEA5712T/N2		
	pcb from stage .3 to stage .4		adaptions for TEA5712T/N2
	3112 from 24k to 22k	4822 051 20223	
	3157 from 47k to 27k	4822 051 20273	
	3159 from 10k to 180k	4822 051 20184	
	2193 100nF added	4822 122 33496	"search sensitivity circuit" changed because of TEA5712T/N2
	3178 from 100k to 3k3	4822 051 20332	
	3179 from 22k to 27k	-	
	3185 from 100k to 4k7	4822 051 20472	
	3186 from 100k to 18k	4822 051 20183	
	3200 22k added	4822 051 20223	
	3235 chip jumper 1206 added	4822 051 90010	
	7169 from BC858B to BC848C	5822 130 42136	
Wk 9335	2154 from 2n2 to 10n	4822 122 33177	reduction of total harmonic distortion
	(USA /17) 15n	4822 122 33128	
	2155 from 2n2 to 10n	4822 122 33177	
	(USA /17) 15n	4822 122 33128	
	2158 from 1n to 180p	4822 122 31768	
	(USA/17)680p to 180p	4822 122 31768	
	2159 from 1n to 180p	4822 122 31768	
	(USA/17)680p to 180p	4822 122 31768	
	5171 coil changed to resistor 3198, 10R		improve S/N on LW 153kHz
Wk 9334	3179 from 27k to 100k	4822 051 20104	to increase FM search sensitivity
Wk 9350	cancellation of MUTE circuit		
Wk 9348	2133 from 10n to 15n	4822 122 33128	to improve PLL behaviour when jumping the whole frequency range on LW from 150kHz to 279kHz
	2138 from 22p to 33p	4822 122 32659	
	2139 from 2n7 to 3n3	4822 122 33891	
	3128 from 2k2 to 10k	4822 051 20103	
	3193 from 470R to 2k2	4822 116 52249	

Survey of changes - ECO 4 tuner board

Introduction date	Change	Service Code	Reason
Wk 9333	3148 from 47k to 100k	4822 100 11163	to ease VCO adjustment
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Wk 9329	7140 from TEA5712T/N1 to TEA5712T/N2		
	pcb from stage .3 to stage .4		adaptions for TEA5712T/N2
	3112 from 24k to 22k	4822 051 20223	
	3157 from 47k to 27k	4822 051 20273	
	3159 from 10k to 180k	4822 051 20184	
	2193 100nF added	4822 122 33496	"search sensitivity circuit" changed because of TEA5712T/N2
	3178 from 100k to 3k3	4822 051 20332	
	3179 from 22k to 27k	-	
	3185 from 100k to 4k7	4822 051 20472	
	3186 from 100k to 18k	4822 051 20183	
	3200 22k added	4822 051 20223	
	3235 chip jumper 1206 added	4822 051 90010	
	7169 from BC858B to BC848C	5822 130 42136	
Wk 9335	2154 from 2n2 to 10n	4822 122 33177	reduction of total harmonic distortion
	(USA /17) 15n	4822 122 33128	
	2155 from 2n2 to 10n	4822 122 33177	
	(USA /17) 15n	4822 122 33128	
	2158 from 1n to 180p	4822 122 31768	
	(USA/17)680p to 180p	4822 122 31768	
	2159 from 1n to 180p	4822 122 31768	
	(USA/17)680p to 180p	4822 122 31768	
	5171 coil changed to resistor 3198, 10R		improve S/N on LW 153kHz
Wk 9334	3179 from 27k to 100k	4822 051 20104	to increase FM search sensitivity
Wk 9350	cancellation of MUTE circuit		
Wk 9348	2133 from 10n to 15n	4822 122 33128	to improve PLL behaviour when jumping the whole frequency range on LW from 150kHz to 279kHz
	2138 from 22p to 33p	4822 122 32659	
	2139 from 2n7 to 3n3	4822 122 33891	
	3128 from 2k2 to 10k	4822 051 20103	
	3193 from 470R to 2k2	4822 116 52249	

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Introduction date: Week 9336.
- To reduce residual noise the value of the motorpot has been changed to 50k Ω . (**4822 101 90248**)
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Introduction date: Week 9332.

- **Fault:** "Ticking noise" is audible during record from CD.

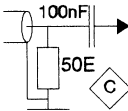
Solution: Following changes have been done on the *FRONT BOARD*.

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Resistor 3609 has been changed to 1k0.	Service code 4822 050 11002 .
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Capacitor 2468 has been changed to 47 μ F.	Service code 4822 124 40433 .

Introduction date: Week 9336.

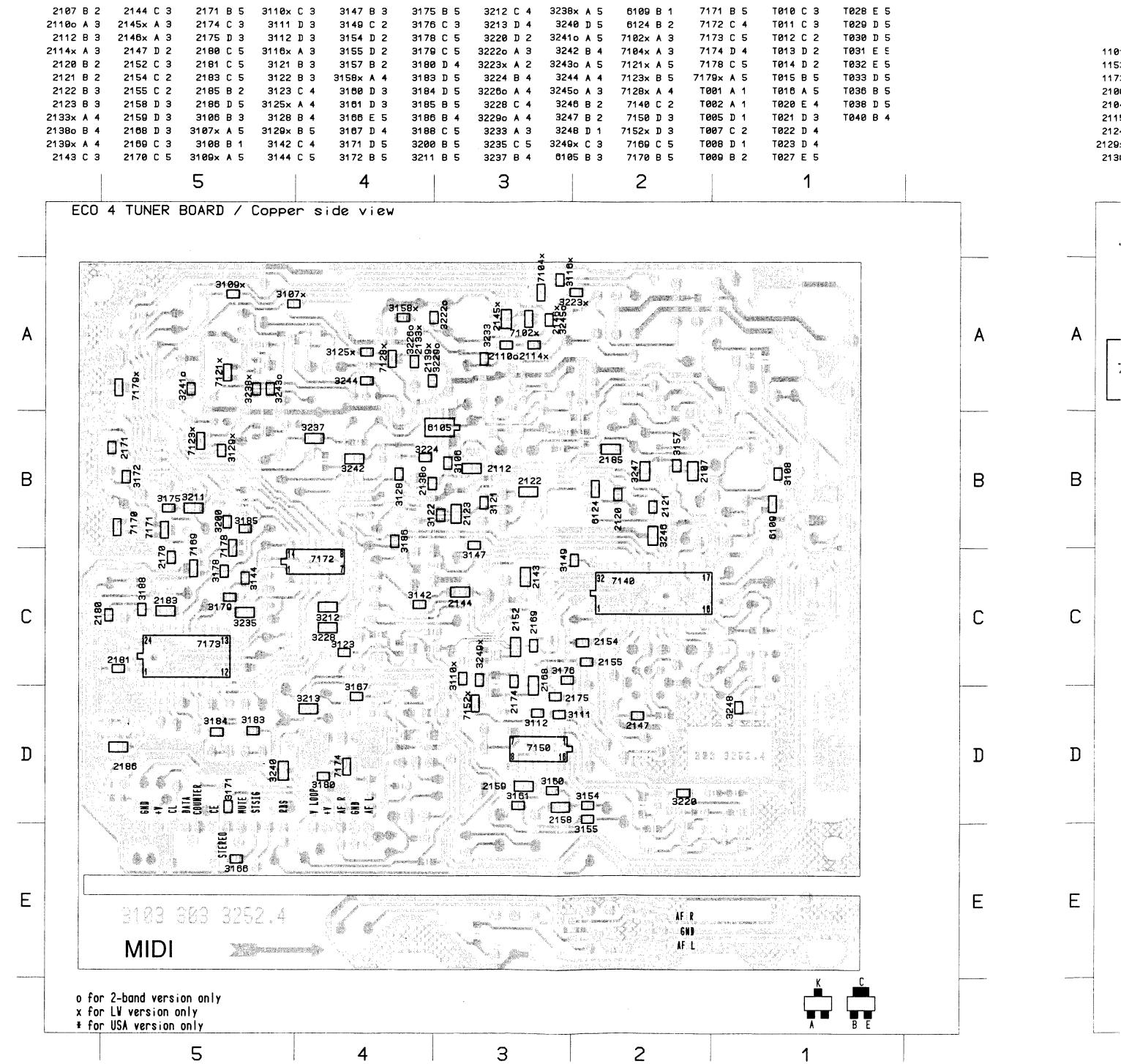
- Correction to the Service Manual
Dismantling hints - picture 6 on page 11.
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Correct is: long pin of LED connected to the grey wire
short pin of LED connected to the black wire
- Due to cost reduction following changes have been done on the *POWER BOARD*.
Introduction date: Week 9336.
 - Capacitors 2325 and 2326 have been changed to 100 μ F. Service code **4822 124 41525**.
 - The complete **switch on mute** circuit has been deleted. (7350, 7351, 3351, 3352, 3353, 6352, 2357)
 - Resistor 3264 has been replaced by a wire bridge.
- Except for the /21, /22 and /30 versions
 - Coils 5309, 5311, 5312, 5315 and 5316 have been replaced by wire bridges.
 - Resistors 3323, 3324, 3325 and 3326 have been replaced by wire bridges too.
 - Capacitors 2266, 2267, 2321 and 2322 have been deleted.
(These components are only necessary to fulfil FTZ requirements.)
- Due to cost reduction pos. 501 (see exploded view of set) has been omitted. Therefore pos. 401 (side left) has been adapted.
Introduction date: Week 9336.

TUNER Adjustment table (ECO 4 FM/MW- and FM/MW/LW - versions with AM-ferrite antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT * ¹⁾						
FM 87.5 - 108MHz			108 MHz	5120	1	8V ± 0.2V
			87.5MHz	check		4.1V ± 0.5V
FM /14 East Europe 65.81 - 108MHz			108 MHz	5120		8V ± 0.2V
			65.81 MHz	check		0.8V ± 0.4V
MW 2-band version, 10kHz grid 530 - 1710kHz			1710kHz	5123		9V±0.1V (7.5±0.7V) ¹⁾
			530kHz	check		1V±0.4V (1.1±0.5V) ¹⁾
LW 153 - 279kHz			279kHz	5122		8V±0.2V (7.5±1.5V) ¹⁾
			153kHz	check		1V±0.4V (1.1±0.5V) ¹⁾
MW 3-band version 522 - 1611kHz			1611kHz	5123		8V±0.1V (7.5±0.5V) ¹⁾
			522kHz	check		1V±0.4V (1.1±0.5V) ¹⁾
FM - RF						
FM	108MHz	A mod=1kHz Δf=22.5kHz	108MHz	2115	3	MAX ↕
	87.5MHz		87.5MHz	5109		
FM /14 East Europe	108MHz		108MHz	2115		
	65.81MHz		65.81MHz	5109		
VCO						
FM	98 MHz, 1mV continuous wave	A	98MHz	3148	2	152kHz ± 1kHz
AM - IF						
MW	540kHz Δf = 10kHz as low as possible		540kHz	5142 5140	4	symmetrical and max height
AM - RF						
LW	198kHz	B mod=1kHz 30% AM	198kHz	5122	4	MAX
MW 3-band version	1494kHz		1494kHz	2130		MAX ↕
	549kHz		549kHz	5123		
MW 2-band version, 10kHz grid	1500kHz		1500kHz	2130		
	550kHz		550kHz	5123		

* Use Service Test Program. By selecting the TUNER TEST, test frequencies will be stored as preset frequ. automatically.
1) Adjustment of AM-RF stage influences the varicap voltage. Therefore check if varicap voltage fulfils value stated within brackets after AM-RF adjustment.

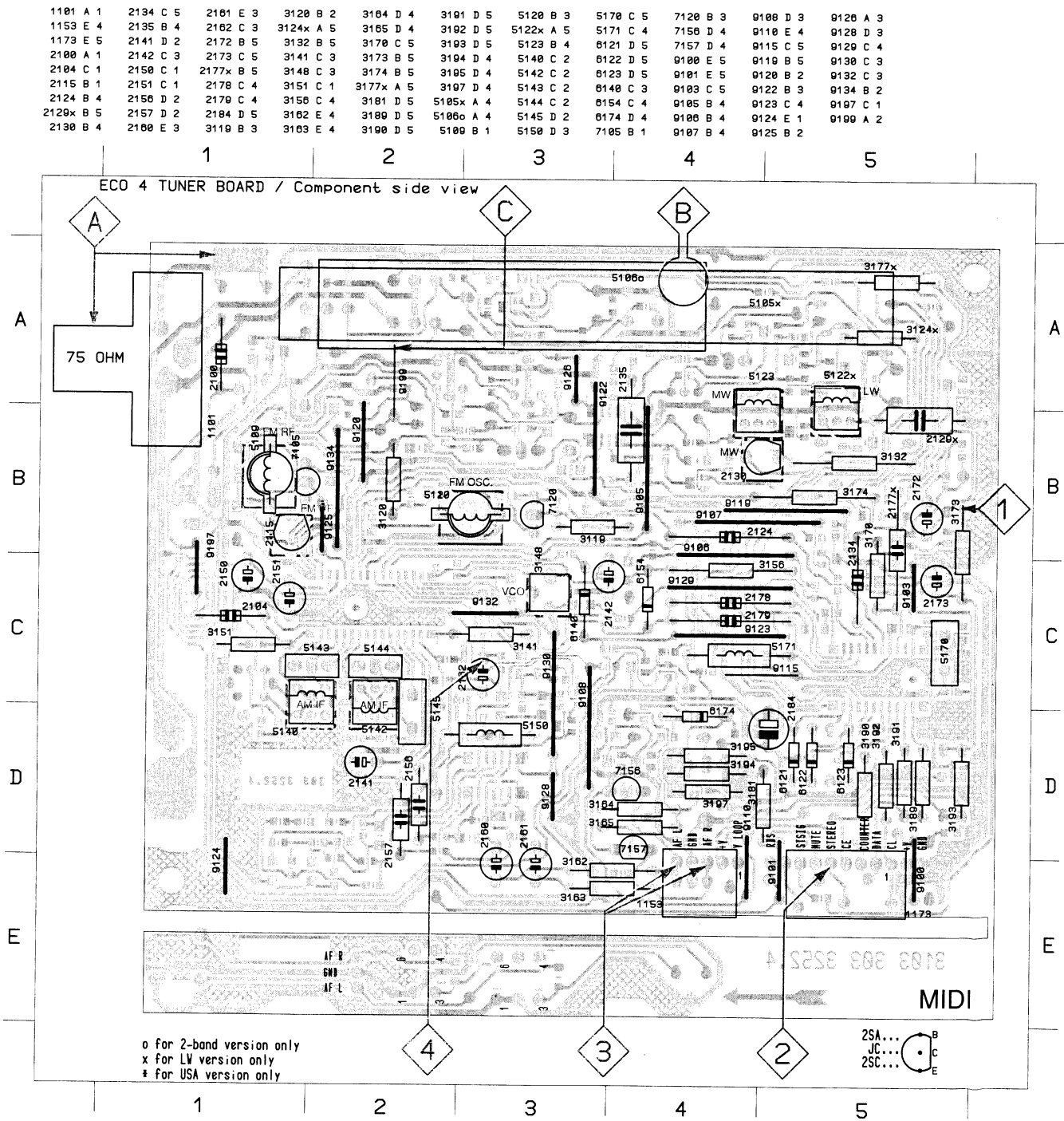
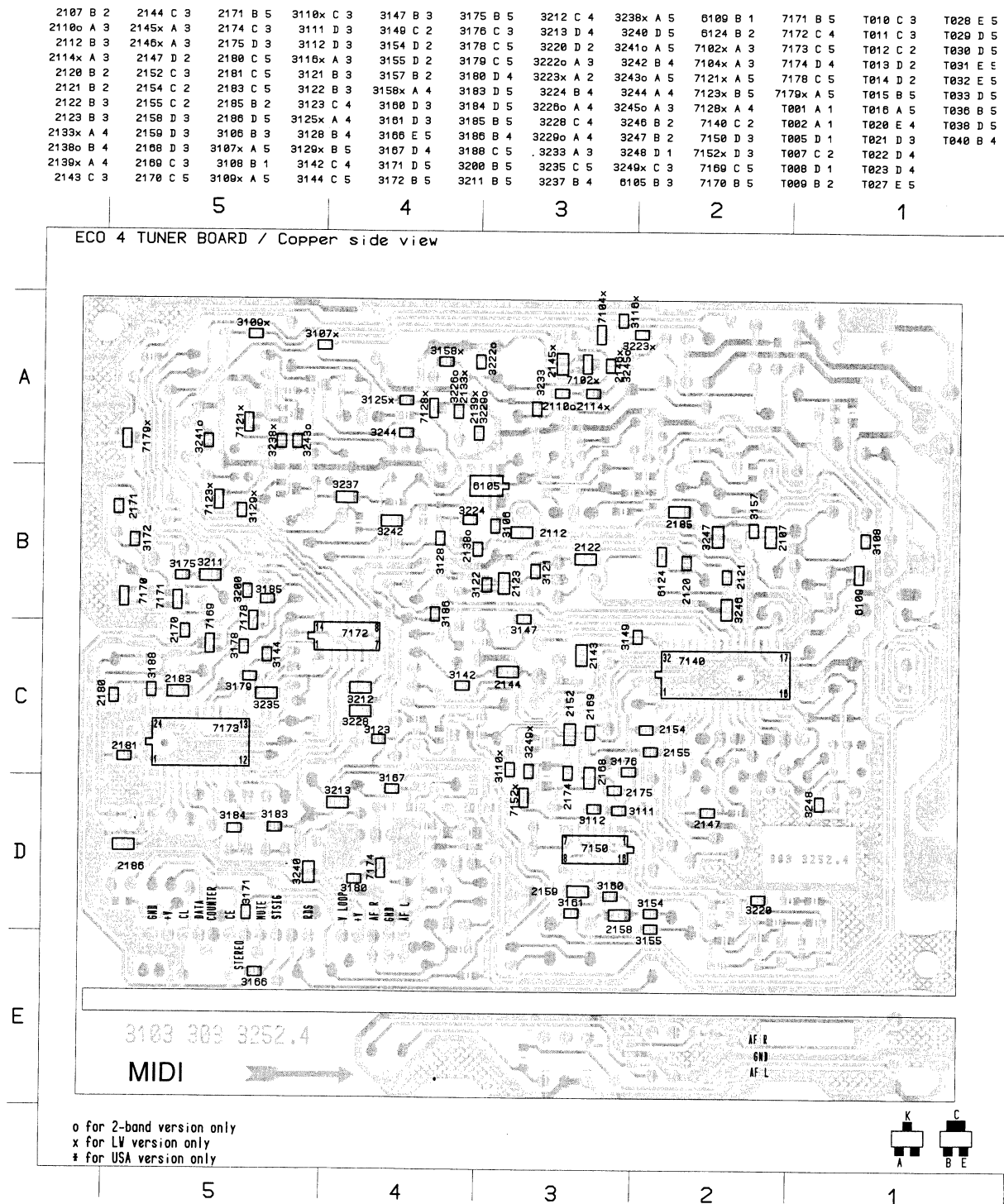
Component layout

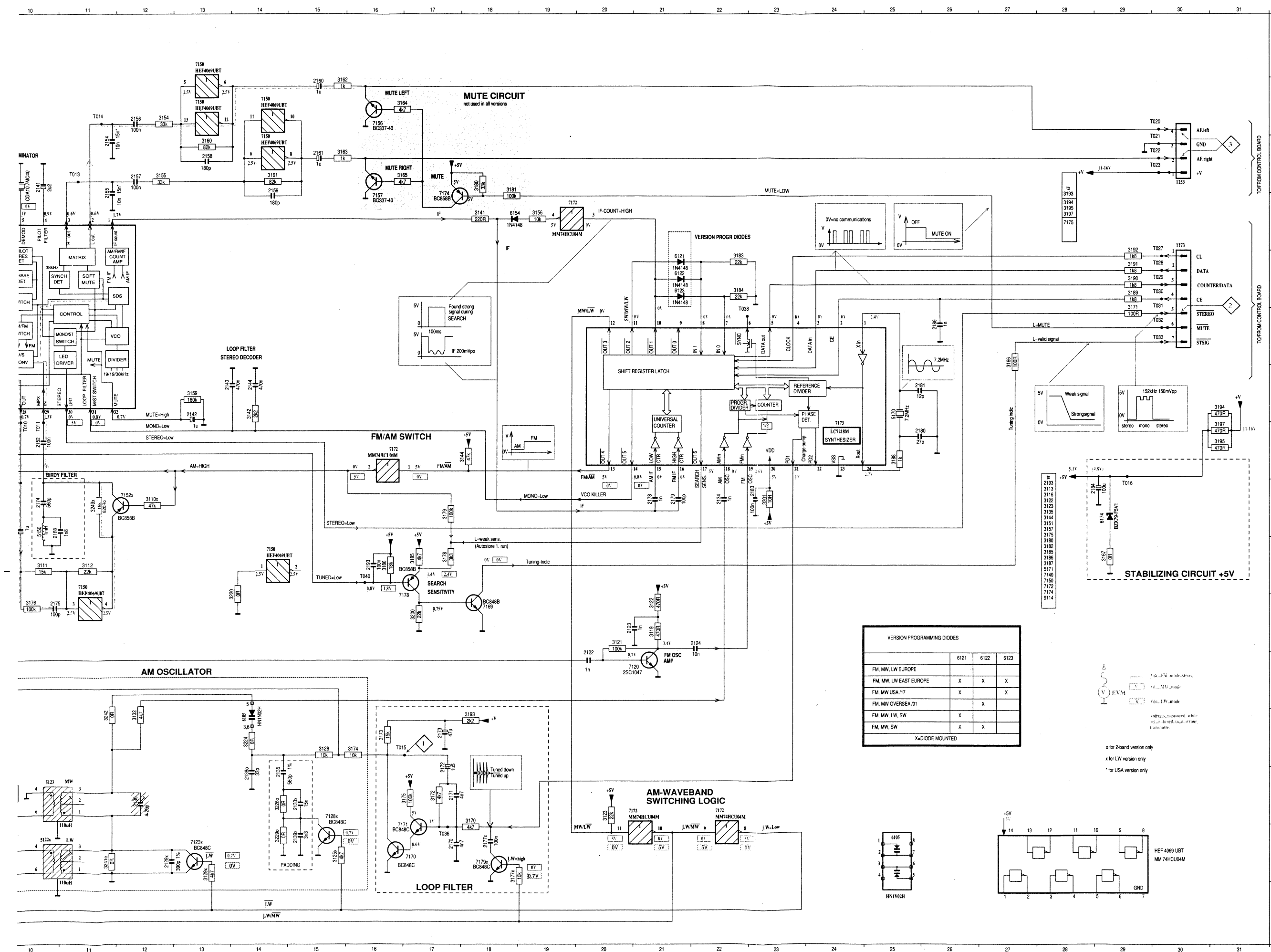


Component layout

Scope / Voltmeter
8V ± 0.2V
4.1V ± 0.5V
8V ± 0.2V
0.8V ± 0.4V
±0.1V (7.5±0.7V) ¹⁾
±0.4V (1.1±0.5V) ¹⁾
±0.2V (7.5±1.5V) ¹⁾
±0.4V (1.1±0.5V) ¹⁾
±0.1V (7.5±0.5V) ¹⁾
±0.4V (1.1±0.5V) ¹⁾
MAX
152kHz ± 1kHz
symmetrical and max height
MAX
MAX

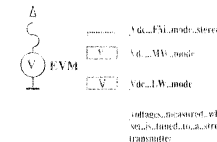
µ. automatically.
je stated within



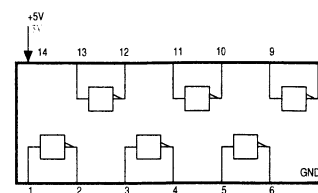
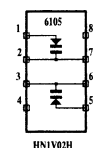


VERSION PROGRAMMING DIODES			
	6121	6122	6123
FM, MW, LW EUROPE			
FM, MW, LW EAST EUROPE	X	X	X
FM, MW USA /17	X		X
FM, MW OVERSEA /01		X	
FM, MW, LW, SW	X		
FM, MW, SW	X	X	

X-DIODE MOUNTED



o for 2-band version only
x for LW version only
* for USA version only

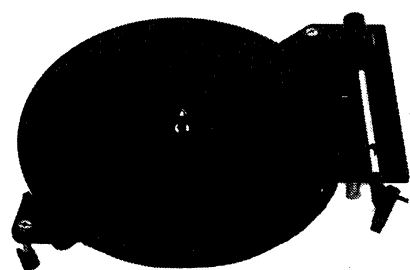


- | | | | |
|---|----------|----------|----------|
| | 101 | 101 C2 | 7150 A13 |
| | | 1153 D30 | 7150 B14 |
| | | 1773 D30 | 7150 B14 |
| | | 2002 C2 | 7150 B13 |
| A | 2070 E8 | 7150 C4 | 7150 B12 |
| | 2107 A8 | | 7156 B16 |
| | 2118 A8 | | 7170 O17 |
| | 2121 N6 | | 7189 B18 |
| | 2122 K6 | | 7172 H16 |
| | 2123 K0 | | 7172 D20 |
| | 2123 K0 | | 7172 N22 |
| | 2124 K22 | | 7173 N24 |
| | 2125 C12 | | 7174 D17 |
| | 2130 N12 | | 7175 A68 |
| B | 2133 N15 | | 7176 K16 |
| | 2138 N04 | | 7197 C3 |
| | 2140 C4 | | 7198 B16 |
| | 2141 C10 | | 7200 C2 |
| | 2142 G13 | | 7202 D2 |
| | 2143 G13 | | 7205 O4 |
| | 2144 C03 | | 7207 D6 |
| | 2145 C03 | | 7208 D6 |
| C | 2149 C03 | | 7209 D6 |
| | 2150 H10 | | 7210 H10 |
| | 2150 H7 | | 7211 H10 |
| | 2154 C11 | | 7213 C01 |
| | 2154 C11 | | 7214 B11 |
| | 2155 C11 | | 7215 C01 |
| | 2156 B12 | | 7216 D29 |
| | 2156 C14 | | 7222 C29 |
| D | 2160 B15 | | 7223 C29 |
| | 2161 H10 | | 7224 C29 |
| | 2162 H10 | | 7228 C30 |
| | 2168 H10 | | 7229 C30 |
| | 2171 N11 | | 7230 E30 |
| | 2171 N17 | | 7231 M17 |
| | 2173 M17 | | 7238 O17 |
| | 2174 H10 | | 7238 F22 |
| | 2175 O18 | | 7240 J16 |
| E | 2178 E21 | | |
| | 2181 C2 | | |
| | 2180 H25 | | |
| | 2181 G25 | | |
| | 2182 C2 | | |
| | 2184 E29 | | |
| | 2185 E28 | | |
| | 2193 J16 | | |
| F | 2197 P5 | | |
| | 2198 K7 | | |
| | 2200 H10 | | |
| | 2210 H12 | | |
| | 2211 J10 | | |
| | 2216 L4 | | |
| | 2218 K21 | | |
| | 2219 N21 | | |
| G | 2221 K21 | | |
| | 2222 K21 | | |
| | 2223 N21 | | |
| | 2224 C03 | | |
| | 2225 O15 | | |
| | 2226 N21 | | |
| | 2228 O13 | | |
| | 232 M12 | | |
| H | 2342 H14 | | |
| | 2342 G14 | | |
| | 2344 H18 | | |
| | 2345 J19 | | |
| | 2346 J19 | | |
| | 2348 B12 | | |
| | 2349 C12 | | |
| | 2350 C12 | | |
| | 2351 J17 | | |
| | 2352 H17 | | |
| | 2353 G13 | | |
| I | 2356 O13 | | |
| | 2360 C13 | | |
| | 2362 B15 | | |
| | 2363 C15 | | |
| | 2364 B16 | | |
| | 2365 C16 | | |
| | 2366 F27 | | |
| | 2367 N17 | | |
| J | 2371 M16 | | |
| | 2372 N17 | | |
| | 2373 O18 | | |
| | 2374 H17 | | |
| | 2375 H17 | | |
| | 2380 C18 | | |
| | 2381 C18 | | |
| | 2383 E22 | | |
| K | 2384 E22 | | |
| | 2385 H25 | | |
| | 2386 J25 | | |
| | 2390 E29 | | |
| | 2391 E29 | | |
| | 2392 H29 | | |
| | 2393 M18 | | |
| | 2394 C31 | | |
| | 2395 H31 | | |
| | 2397 H31 | | |
| L | 2400 J17 | | |
| | 2401 J22 | | |
| | 2402 P3 | | |
| | 2403 N4 | | |
| | 2424 M14 | | |
| | 2426 N14 | | |
| | 2427 N14 | | |
| | 2428 M5 | | |
| M | 2431 O11 | | |
| | 2442 M11 | | |
| | 2443 N4 | | |
| | 2444 N4 | | |
| | 2449 H11 | | |
| | 2450 P2 | | |
| | 2451 H31 | | |
| | 2452 H31 | | |
| | 2453 D7 | | |
| | 2454 D7 | | |
| | 2455 G25 | | |
| | 2456 G25 | | |
| N | 2459 J7 | | |
| | 2502 P3 | | |
| | 2503 N5 | | |
| | 2504 A8 | | |
| | 2505 D7 | | |
| | 2506 D7 | | |
| | 2507 H25 | | |
| | 2508 J25 | | |
| | 2509 J25 | | |
| | 2510 J25 | | |
| | 2511 J25 | | |

Record player DL-40
3139 118 72550

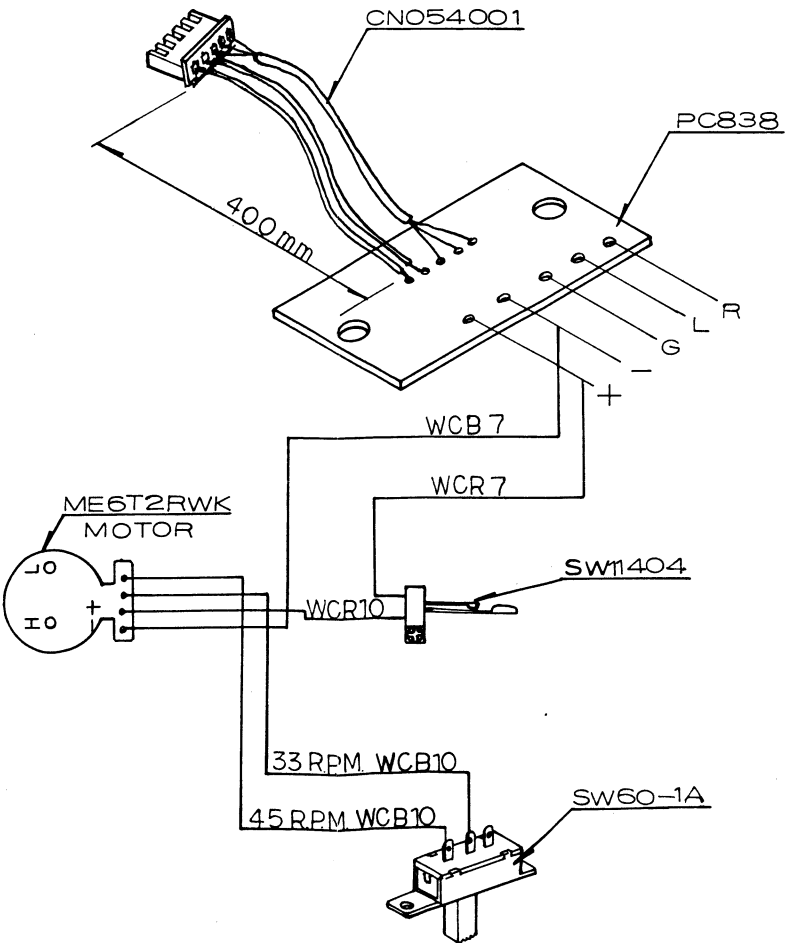
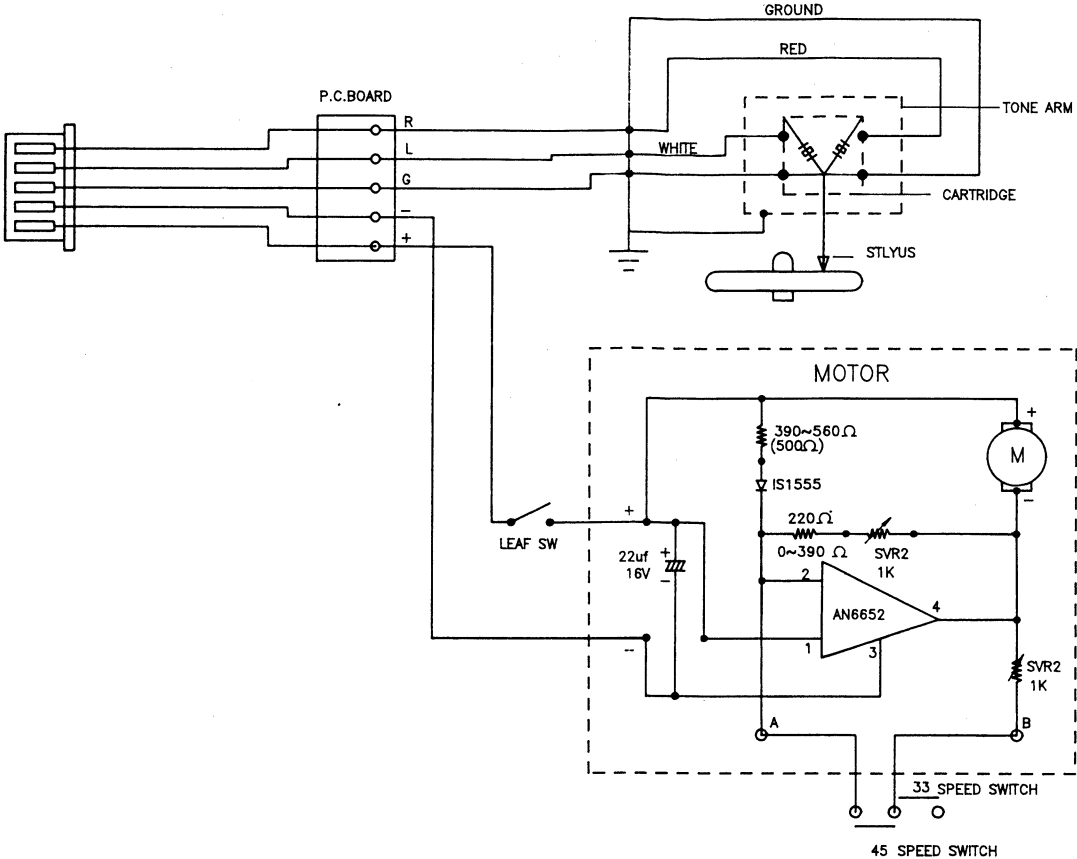
Service
Service
Service

Service Manual

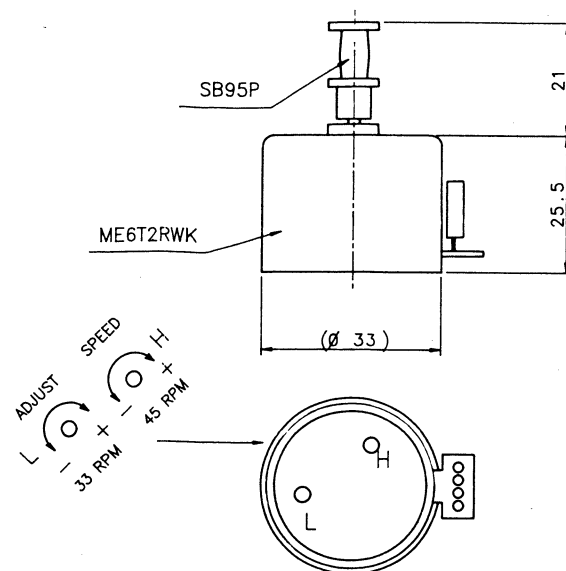
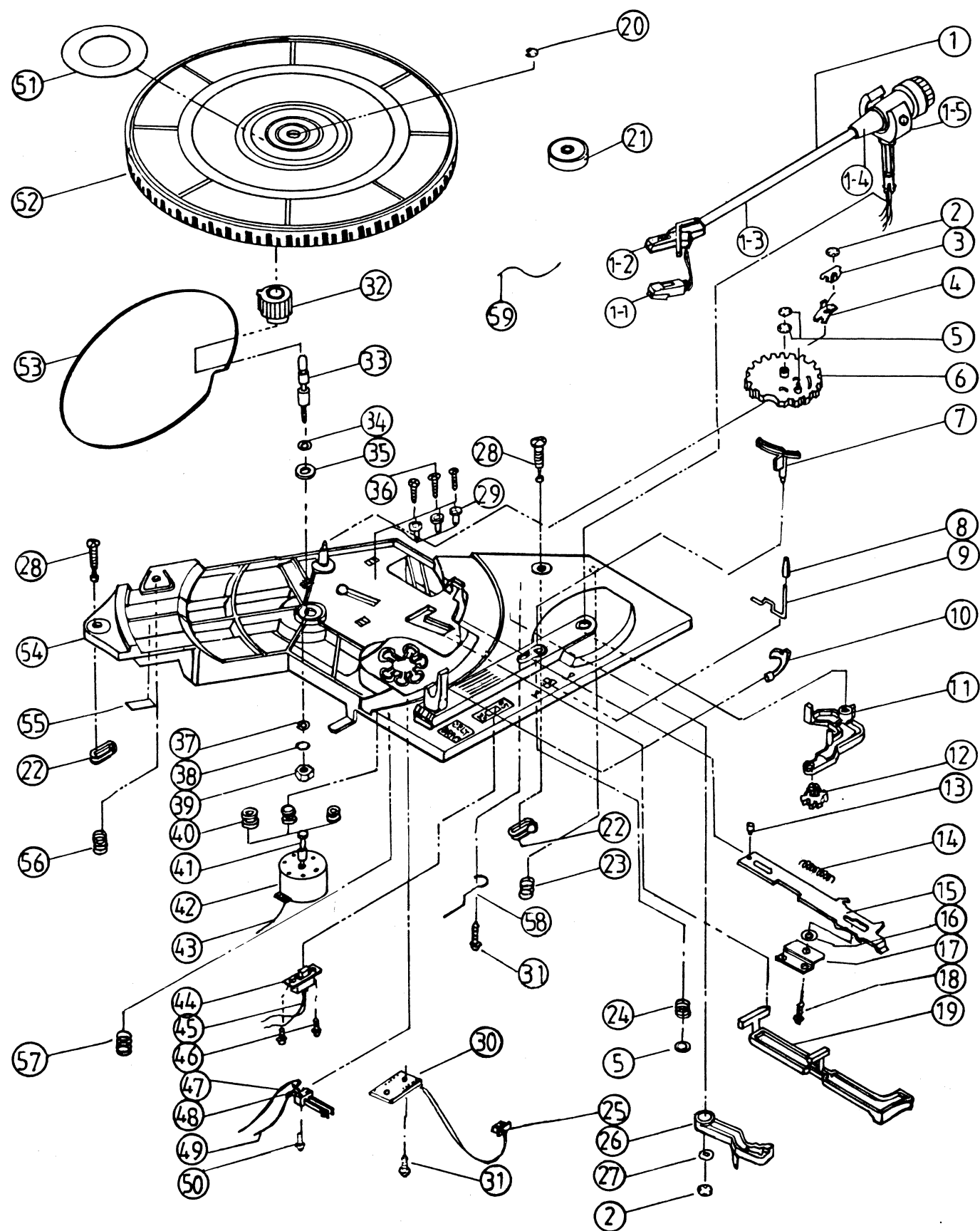


Specification
Power supply: 12V dc at 80mA
Wow and flutter: 0.25% JIS
0.35% DIN
Operating speed: 33 1/3 - 45rpm
Drive system: Belt drive with auto return

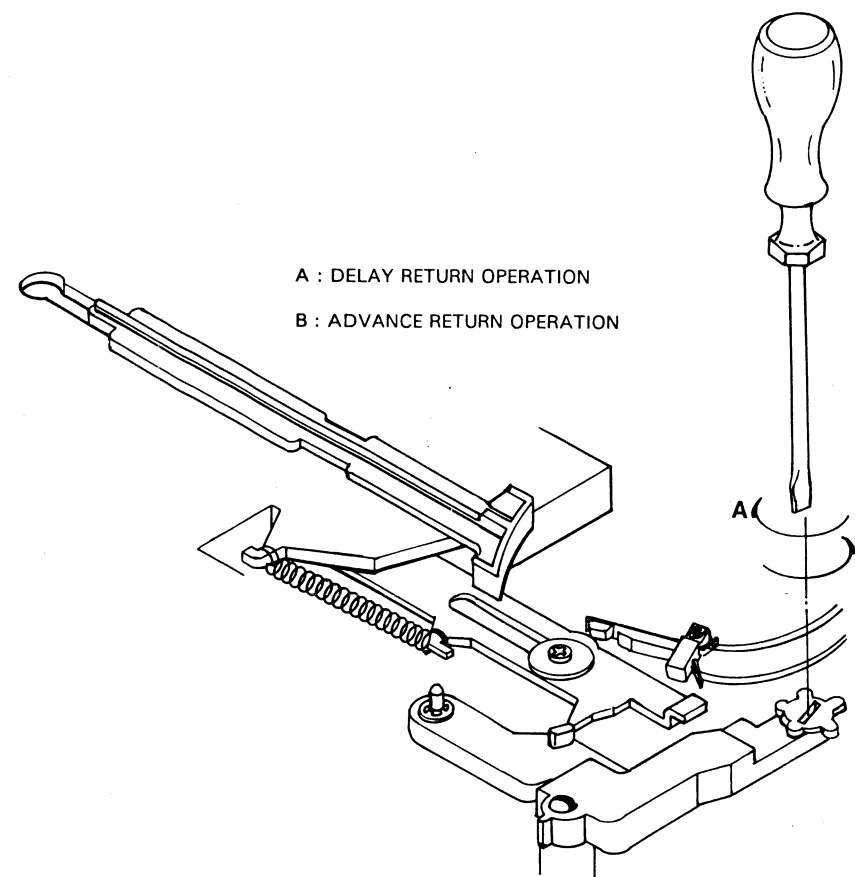
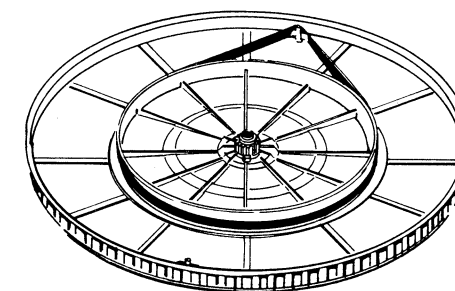
"Pour votre sécurité, ces documents
doivent être utilisés par des spécia-
listes agréés, seuls habilités à réparer
votre appareil en panne".



EXPLODED VIEW



PLACEMENT OF BELT



01	4822 251 70328
1-1	4822 251 30153
02	4822 530 80538
05	4822 530 80539
06	4822 522 33247

07	4822 402 61417
08	4822 462 41916
09	4822 402 61413
10	4822 402 61416
11	4822 402 61414

12	4822 402 61415
14	4822 492 71081
22	4822 492 71082
23	4822 492 71079
24	4822 492 71077

26	4822 466 93093
27	4822 532 52438
28	4822 502 13959
29	4822 532 52302
32	4822 522 33225

34	4822 532 52439
35	4822 532 52434
37	4822 532 52449
40	4822 462 71829
41	4822 528 50332

42	4822 361 21305
44	4822 277 21596
48	4822 276 13251
51	4822 460 20803
52	4822 528 10843

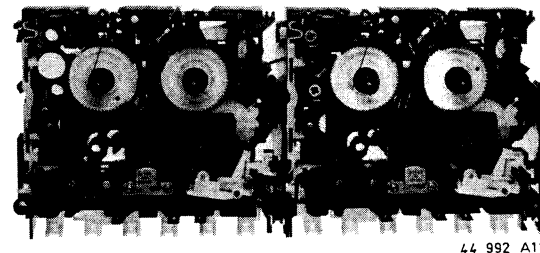
53	4822 358 31178
56	4822 492 71078
58	4822 492 71095

Note : Only the mentioned parts are normal service parts.

Tape transport RDN11

Service Service Service

For details and exploded view see Service Manual of tape transport RN/RR, RDN/RDR (general documentation)



44 992 A11

Service Manual

GB MAINTENANCE

It is recommended to clean the recorder after approx. 500 hours of operation.

To be cleaned with alcohol or spirit

- Erase head
- Recording/playback head
- Capstan
- Pressure roller

F ENTRETIEN

L'appareil devra être nettoyé après env. 500 heures de marche aux points les plus importants.

Nettoyer les éléments suivants à l'alcool ou à l'alcool à brûler:

- Tête effacement
- Tête enregistrement/reproduction
- Cabestan
- Galet presseur

I MANUTENZIONE

E consigliabile pulire l'apparecchio dopo circa 500 ore di funzionamento ai punti principali.

Pulire con alcool

- Testina di cancellazione
- Testina di registrazione/riproduzione
- Capstan
- Rullo preminastro

NL ONDERHOUD

Aanbevolen wordt het apparaat na ca. 500 bedrijfsuren schoon te maken

Schoonmaken met alcohol of spiritus:

- Wiskop
- Opneem-/weergeefkop
- Toonas
- Drukrol

D WARTUNG

Es empfiehlt sich, das Gerät nach ca. 500 Betriebsstunden zu reinigen

Reinigen mit Alkohol oder Spiritus:

- Löschkopf
- Aufnahme/Wiedergabe-Kopf
- Tonachse
- Andruckrolle

SPECIAL FEATURES

GB CONTINUOUS PLAY

Definition: "Play" starts on deck A (play back deck). After tape end on deck A, deck B (REC/PB - deck) will be going on with "Play" till tape end. Then both decks will be in "Stop" - mode due to full auto shut off.

Operating sequence:

- 1) start with "Play" on deck A
- 2) switch "Pause" on deck B
- 3) switch "Play" on deck B

After tape end on deck A auto stop - mechanism is working. The locked "play" - button on deck A and the "pause" - button on deck B will be released. "Play" - mode on deck B will now be active. After tape end on deck B full auto shut off will be activated.

SYNCHRO START

"COPY" from deck A to deck B

Operating sequence:

- 1) switch "Pause" on deck B
- 2) switch "REC" (one touch) on deck B
- 3) switch "Play" on deck A

In that moment when the "play" - button on deck A will be depressed the "pause" - button on deck B will be released. Now "REC" - mode on deck B will be active. Both decks will be working.

If one of the cassettes reaches tape end full auto shut off will be activated and COPY is finished.

NL ONONDERBROKEN WEERGEVEN

Omschrijving: Het weergeven begint op deck A (weergavedeck). Nadat op deck A het einde van de band is bereikt, gaat het weergeven door op deck B (opname/weergave-deck). Op dat moment worden beide decks geheel automatisch in de stand "Stop" geschakeld. Bedieningsvolgorde:

- 1) druk op toets "Play" op deck A
- 2) druk op toets "Pause" op deck B
- 3) druk op toets "Play" op deck B

Nadat het einde van de band op deck A is bereikt, treedt het autostop-mechanisme in werking. De vergrendelde toets "Play" op deck A en de toets "Pause" op deck B worden dan vrijgegeven. De stand "Play" op deck B is nu geactiveerd. Nadat het einde van de band op deck B is bereikt, wordt de volledig automatische uitschakeling geactiveerd.

SYNCHROON STARTEN

"KOPIEREN" van deck A naar deck B

Bedieningsvolgorde:

- 1) druk op toets "Pause" op deck B
- 2) druk (een keer) op toets "REC" op deck B
- 3) druk op toets "Play" op deck A

Op het moment dat de toets "Play" op deck A wordt ingedrukt, wordt de toets "Pause" op deck B vrijgegeven. De stand "REC" op deck B is nu geactiveerd. Beide decks zijn in werking.

Indien op een van de cassettes het einde van de band wordt bereikt, wordt de volledig automatische uitschakeling geactiveerd en het kopiëren beëindigd.

F LECTURE EN CONTINU

Définition: La lecture ("play") démarre sur la platine A (platine de lecture). A l'arrivée en fin de bande sur la platine A, la platine B (platine d'enregistrement/lecture) poursuivra la lecture ("play") jusqu'à la fin de la bande. Ensuite, les deux platines seront en mode arrêt ("stop") grâce à l'arrêt total automatique.

Ordre de fonctionnement :

- 1) mettez en marche avec "Play" sur la platine A
- 2) appuyez sur "Pause" sur la platine B
- 3) appuyez sur "Play" sur la platine B

Après l'arrivée en fin de bande sur la platine A, le mécanisme d'arrêt automatique entre en fonctionnement. Les touches verrouillées "play" sur la platine A et "pause" sur la platine B sont alors débloquées. Le mode lecture ("play") sur la platine B est à présent actif. Après l'arrivée en fin de bande sur la platine B, l'arrêt total automatique sera activé. Lorsque la touche de "sélection de mode" est en position 2 (inversée), il est alors possible d'écouter trois faces de deux cassettes en continu.

DEPART SYNCHRONISE

Pour la COPIE de la platine A vers la platine B
Ordre de fonctionnement :

- 1) appuyez sur "Pause" sur la platine B
- 2) appuyez sur "REC" (enregistrement à une touche) sur la platine B
- 3) appuyez sur "Play" sur la platine A

Au moment où la touche "play" (lecture) sur la platine A sera enfoncée, la touche "pause" sur la platine B sera dégagée. Le mode "REC" (enregistrement) sur la platine B est à présent actif. Les deux platines fonctionnent. Si l'une des cassettes arrive en fin de bande, l'arrêt total automatique sera activé et la COPIE terminée.

D CONTINUOUS PLAY

Definition: "Play" beginnt auf Laufwerk A (Wiedergabe - Laufwerk). Am Bandende von Laufwerk A setzt Laufwerk B (Aufn./Wg - Laufwerk) mit "Play" fort und läuft bis Bandende. Danach sind beide Laufwerke abgeschaltet. Bedienungsablauf:

- 1) "Play" - Taste auf Laufwerk A drücken
- 2) "Pause" - Taste auf Laufwerk B drücken
- 3) "Play" - Taste auf Laufwerk B drücken

Am Bandende von Laufwerk A arbeitet der Auto stop - Mechanismus. Die "Play" - Taste von Laufwerk A und die "Pause" - Taste von Laufwerk B werden gelöst. Auf Laufwerk B ist nun die "Play" - Funktion eingeschaltet. Am Bandende von Laufwerk B schaltet die automatische Endabschaltung ab.

SYNCHRO START

"Kopieren" von Laufwerk A auf Laufwerk B.

Bedienungsablauf:

- 1) "Pause" - Taste von Laufwerk B drücken
- 2) "REC" - Taste (one touch) von Laufwerk B drücken
- 3) "Play" - Taste von Laufwerk A drücken

In dem Moment wo die "Play" - Taste von Laufwerk A gedrückt wird, wird die "Pause" - Taste von Laufwerk B gelöst. "Aufnahme" - Modus wird dadurch auf Laufwerk B aktiviert und beide Laufwerke arbeiten. Erreicht eine der beiden Kassetten das Bandende, schaltet die automatische Endabschaltung ab und der Kopierbetrieb wird beendet.

I RIPRODUZIONE CONTINUA

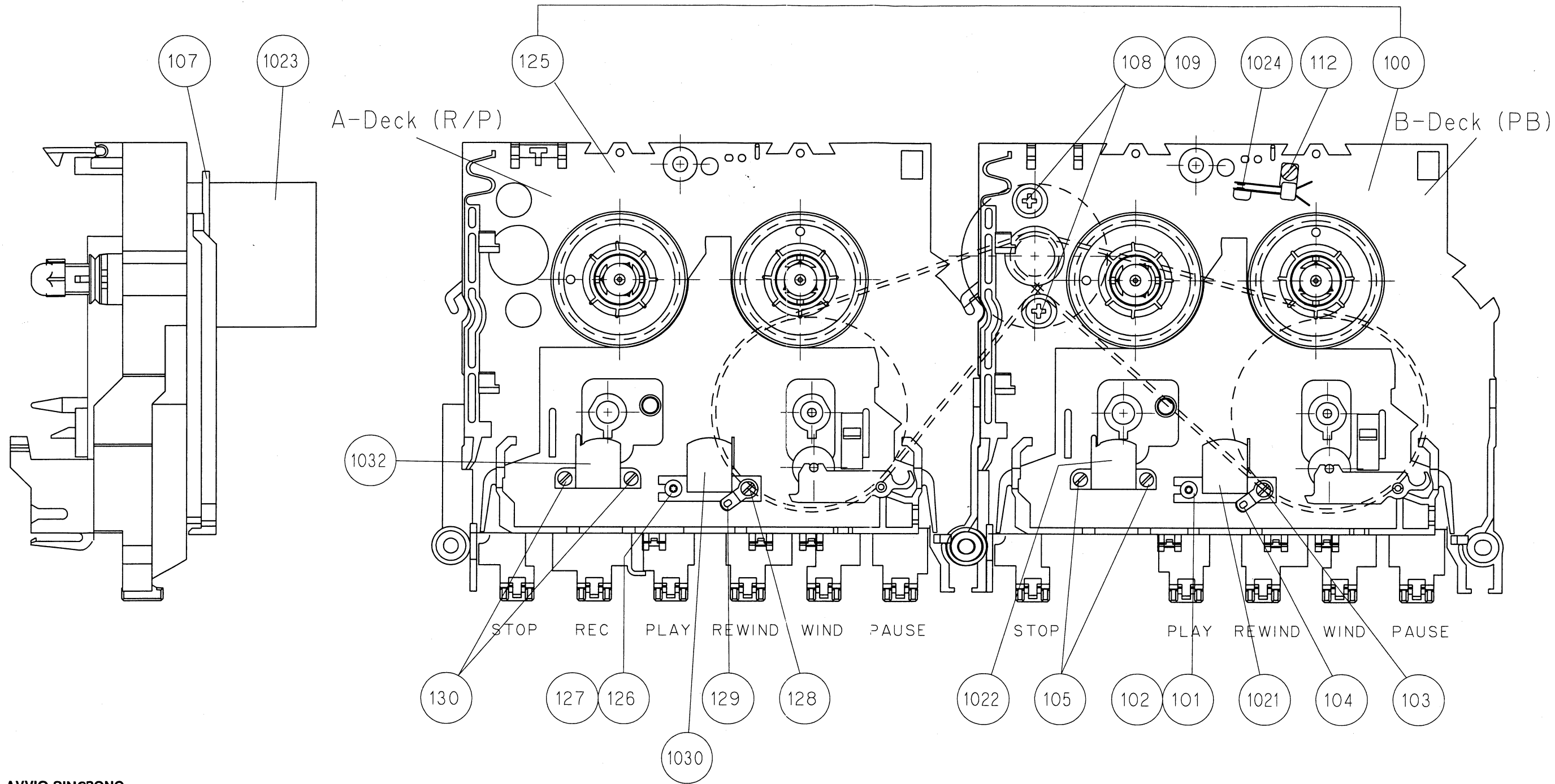
Funzionamento: la riproduzione inizia con la cassetta nel riproduttore A. Alla fine del nastro della cassetta nel riproduttore A, la riproduzione viene continuata con la cassetta nel registratore/riproduttore B. In tale momento, ambedue gli apparecchi vengono commutati automaticamente nel modo di arresto.

Ordine di comando:

- 1) premere il tasto "Play" sul riproduttore A
 - 2) premere il tasto "Pause" sul registratore/riproduttore B
 - 3) premere il tasto "Play" sul registratore/riproduttore B
- Alla fine del nastro della cassetta nel riproduttore A, viene attivato il meccanismo di arresto automatico dello stesso. Viene rilasciato il tasto "Play" sul riproduttore A ed il tasto "Pause" sul registratore/riproduttore B. Viene avviata la riproduzione della cassetta nel registratore/riproduttore B. Quando è stata raggiunta la fine del nastro della cassetta nel registratore/riproduttore B, ambedue gli apparecchi vengono arrestati automaticamente.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

STRIPPED VERS. WITHOUT NOTED ITEMS IS CALLED AND HANDLED AS **RN 0** 4822 691 10296



AVVIO SINCRONO

COPIATURA della cassetta nel riproduttore A sulla cassetta nel registratore/riproduttore B.
Ordine di comando:
1) premere il tasto **"PAUSE"** sul registratore/riproduttore B.
2) premere (una volta) il tasto **"REC"** sul registratore/riproduttore B.
3) premere il tasto **"PLAY"** sul riproduttore A.
Premendo il tasto **"PLAY"** sul riproduttore A verrà rilasciato il tasto **"PAUSE"** sul registratore/riproduttore B e quest'ultimo predisposto per la registrazione. La cassetta nel riproduttore A viene copiata sulla cassetta nel registratore/riproduttore B. Quando viene raggiunta la fine del nastro di una delle cassette, ambedue gli apparecchi vengono arrestati automaticamente.

100	4822 691 10296	RN 0 assy
101	4822 492 51473	spring azimuth
107	4822 529 10254	damp, motor
108	4822 502 11866	screw, motor
125	4822 691 10296	RN 0 assy
126	4822 492 51473	spring, azimuth
1021	4822 249 10397	head, Rec/Pb
1022	4822 404 10685	head, dummy
1023	4822 361 21637	motor, MSI-5U2LWDR
1024	4822 271 30598	switch indication play
1030	4822 249 10397	head, Rec/Pb
1032	4822 249 20072	head, erase

General parts

7/67	4822 520 10718	bearing plate
38	4822 520 40134	ball, bearing
40	4822 402 10037	lever, pinch roller right
41/76	4822 528 70646	pinch roller
43	4822 404 10853	slide, key lock
58	4822 358 30929	drive belt RN0 S (long)
98	4822 358 30928	drive belt RN0 D (short)
402	4822 528 20676	take-up clutch assy

(pos. number refer to exploded view in General Documentation 4822 725 23763)

Only those parts of which a service code number is stated are service parts.

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Product Service Group CE Audio

Service Information

Correction of Service Manual 4822 725 23792

The text in the table of contents and the exploded view (page 77) referring the tape transport is stated wrong.

Used tape transport is RDN11. The Manual in the annex is correct.

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Product Service Group CE Audic

Service Information

Already published Service Informations: A93-360 (4822 725 24909)
A93-367 (4822 725 24919)

Correction of Service Manual 4822 725 23792.

Replace the CD Part (Page 59 - 70) respectively the Partslist (Page 91 - 93) by the following pages.